

## Heard Island Expedition 1997



# Scoping Document

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## Heard Island Expedition 1997 (Scoping Document)



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## SCOPING DOCUMENT

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This document presents the motivations, goals, and plans for the 1997 Cordell Expedition to Heard Island. It is meant to be a descriptive and planning document for anyone interested in the project, including potential participants, support persons and organizations, and governmental agencies involved in permitting. All or portions of this document may be freely copied, but please quote the source. Because the project will evolve, this document will evolve. For the current status of the project, please contact Cordell Expeditions.

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[HB9AHL](#) Willy Rusch  
[KØIR](#) Ralph Fedor  
[K4UEE](#) Bob Allphin  
[K9AJ](#) Mike McGirr  
[KK6EK](#) Bob Schmieder  
[N6EK](#) Bob Fabry  
[N6MZ](#) Michael Mraz  
[NP4IW](#) Carlos Nascimento  
[OE9AMJ](#) Arno Metzger  
[ON5NT](#) Ghis Penny  
[ON6TT](#) Peter Casier  
[PA3DUU](#) Arie Nugteren  
[RA3AUU](#) Igor ("Harry") Booklan  
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[W8FMG](#) Wes Lamboley  
[WØGJ](#) ([WAØPUJ](#)) Glenn Johnson  
[WA3YVN](#) Al Hernandez  
[9V1YC](#) James Brooks

## [BIBLIOGRAPHY](#)

General  
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This document is posted on the World Wide Web (WWW) at

<http://www.cordell.org/HI/scoping>

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## BACKGROUND OF THE EXPEDITION

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### Previous Radio Expeditions to Heard Island

[The material in this section was taken verbatim from Stephen Pall's articles in Amateur Radio (Australia) Aug., 1995, pp. 32-33 and Oct. 1995, p. 35].

The first amateur radio activity from Heard Island came in 1947 when Allan Campbell- Drury signed VK3ACD/Heard. He was on the island for 15 months and returned to the island for the two following years with ANARE. It was also reported that in the years of 1948-50 Michael Vause was signing as VK1HV/Heard. According to CQ magazine, N. T. Lied used the VKØNL callsign in 1963. Bob Allison was also reported in the same year using the callsign VK1RA. Don Miller W9WNV "used" the call VK2ADY/VKØ in 1966. In 1969 Bill Rohrer W7ZFY was heard with the callsign VKØWR when he USCG Southwind stopped to unload some scientific equipment. Hugh Milburn WA6EAM signed VKØHM in 1976 when he was on Heard Island in connection with a group making celestial observations for the National Mapping Authority.

There is also a suggestion that a year later a French group visited the island and F2JD was reported to be active using the VKØHM callsign. The National Mapping group apparently visited Heard Island several times. In 1980 the ship Cape Pillar took some members of the mapping group to the island. The call VKØRM was used by the radio officer of the ship. He made only a limited number of contacts before his equipment failed.

There was not reported amateur radio activity between the years of 1980-1983. 1983 saw the start of the properly organized combined scientific-amateur DXpeditions to the island. To the delight of the "deserving," not one but two independently organized DX groups visited the island in January-February 1983. The West Australian VK6 DX Chasers Club combined with a mountaineering group on the island from 21 January to 21 February 1983 and made 30,000 contacts under the callsigns VKØHI and VKØCW. The operators were Dave Shaw VK3DHF and Al Fisher K8CW.

Jim Smith VK9NS was the leader of the other group, HIDXA, which visited the island more or less at the same time as the VK6 DX Chasers Club expedition. HIDXA, the Heard Island DX Association, was formed in 1980 with the sole objective of activating this rare DXCC country. The HIDXA group of five amateurs and 13 scientists landed on the island on 5 February. The operators were VK9NS, VK9NL, VKØSJ, WA8MOA, and OE1LO, using the callsign VKØJS, and made 14,000-plus contacts with 138 countries. The adventurous and very often dangerous sea

voyage in the old whaling ship Cheynes II to Heard Island and back to Albany, WA is a separate story in itself.

No radio amateur activity was then noticed from Heard Island until late 1986, early 1987, when Frank VKØDA spent two months on the island as a member of the ANARE team.

### **The 1995 Expedition**

In mid-1994 Ralph Fedor KØIR, Expedition Leader for the 1994 Peter I (3YØPI) DXpedition, invited two of the team members, Robert Schmieder KK6EK, and Peter Casier ON6TT, to plan an amateur radio DXpedition to Heard Island for 1995. The planning was done entirely on Internet, probably a first for a major expedition of this nature. Permit 95-1 was granted by the Australian Antarctic Division (AAD) in January, 1995, and assembly of the team and equipment, and search for transportation, begun.

The project was positioned to take advantage of the innovations from the 1995 Easter Island Expedition XRØY/Z, led by KK6EK and NP4IW. It was planned to deploy a beacon supplied by N6EK and the NCDXF; use a Pacsat station to upload the logs and other data; implement e-QSLs used for the first time on XRØY; implement a high-speed computer logging network; post WWW pages and provide a callsign server to get access to the logs; and carry out extensive analysis of the radio logs to test radio propagation models and software.

Finding a suitable vessel within the available budget proved to be more difficult than expected. Searches were made in Australia and South Africa, as well as through other governments, including France, which has the research base on Kerguelen Island, only 200 miles to the north. In July, a vessel operator in Australia contacted the group and offered a vessel at an affordable price, and a contract was drawn.

With transportation assured, the gear was shipped to Australia, and the team alerted to be ready. The final team included KØIR, KK6EK, ON6TT, Arie Nugteren PA3DUU, Harry Buklan RA3AUU, Bob Fabry N6EK, Junicho Tanaka JH4RHF, and Willy Rusch HB9AHL. In mid-September, 1995, the team became suspicious that the vessel operator was not making appropriate preparations. Inquiries to the boatyard indicated that the vessel was inadequate for the voyage, and the operator was apparently intending to flee with the monies placed on deposit. Uncertain of the circumstances, the team elected to fly to Australia and proceed with legal action if necessary. The operator did, in fact, flee under cover of darkness, leaving the Expedition group without a charter and without the deposit money. Attempts were made to locate another vessel, but none was available within the remaining resources. Legal means proved inadequate to recover the deposit, and the team elected to reschedule the Expedition for the 1996-97 season.

Given the revised schedule and the necessity for rebuilding the team and financial resources, KØIR asked KK6EK and ON6TT to take primary responsibility for the 1996-97 Expedition. The Expedition was scheduled for the interval Dec 1996--Feb, 1997, and brought under the auspices of Cordell Expeditions, which is the research organization directed by KK6EK.

## Heard Island Expedition 1997 (Scoping Document)



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## GOALS AND OBJECTIVES

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### **General**

The primary motive for the Cordell Expeditions is to foster international goodwill and cooperation in documenting remote sites and preserving their natural history and cultural resources. To that end, the 1997 Heard Island Project will be international in scope and participation.

The primary goal for the Heard Island Expedition will be to complete the scientific activities safely, without loss or damage to persons or property. To that end, the Project will be a model of careful planning, safe operations, and appropriate stewardship.

Another goal is to enable as many people as possible to participate in some aspect of the Project and the Expedition. To that end, we will welcome support and participation from any source, and we will carry out the Project with the highest regard for the interests and needs of our public.

### **Radio science**

The primary goal for the radio operations will be to extend technology and techniques for radio operations on remote sites. To that end, we will implement a large number of innovations and experiments associated with radio communications, primarily on the amateur bands.

A very general goal is to enable remote participation in the Expedition by large numbers of people by providing interactive communications in nearly real time. The technical challenge is to establish a temporary structure that will enable the Expedition to send and receive messages about the Expedition by means other than amateur radio. For instance, a person with a computer could log into a local database and receive data and information about the Expedition in nearly real time. We want the Expedition to be a participatory, as opposed to spectator, event.

A specific goal for the amateur radio operations is:

- Set a new world record for the number of radio contacts made by a DXpedition

We think of a DXpedition as a group that carries its own full life-support and radio equipment (shelters, food, power, radios, etc). The current record is 60,000 contacts, set by the 3YØPI team. Achieving more than this will require the best equipment, planning, operations, cooperation of



the amateur radio community, and reasonable good luck. This goal is not a stunt; it is a driver for developing new technology and techniques.

We have many more specific goals for the radio science, including:

- Study HF radiowave propagation

During this period, the solar flux is low, and current models and codes are incapable of predicting radio propagation. The body of data we will obtain will enable testing and improvement of those models.

- Test new designs for low band antennas

The most difficult band for amateur radio is 160 meters, followed by 80 and 40 meters. A colleague, ON4UN, has developed new designs for lowband antennas, and the HI Expedition will provide a critical test of these antennas.

- Experiment with local high speed interference-free and long distance computer links.

In order to be most efficient in the use of the operating time, we will develop links between the computers used for logging contacts. The challenge is to prevent these links from suffering interference due to the very strong radio-frequency fields. We will use several techniques, including filtering, fiber optics, and error checking, to obtain error-free communications onsite.

- Develop a new software protocol for on-line computer logging in the field

We are interested in improving the software available for operators on a DXpedition. The operator needs to have monitors, alerts, alarms, and other automatic features that give him information about propagation, weather, time, what the other operators are doing, etc. For example, the computer could use the current solar indices to predict that propagation to a certain region is just opening. It could then generate an alert to the operator, suggesting switching bands.

- Adapt the radio procedures and operation

Pilot stations have been used to good advantage on the AH1A, 3YØPI, and other major operations. The pilots interact with the Expedition off-line, providing feedback on the operations. We will use a system of pilots for the HI Expedition, but we intend to extend the pilot capability using the resources of Internet. ·

- Experiment with new software and hardware interfaces

We want to automatically track radio amateur satellites in high speed orbits. · Experiment with high speed datalinks over radio using packet radio over radio amateur satellite, including automatic uploading and downloading of data.

- Experiment with fast Internet links via packet gateways

We have implemented a variety of amateur\_radio-Internet-packet\_radio gateways which allow passing data between these different systems. ·

- Experiment with data compression schemes

In order to decrease transmission time, we have developed a new data compression scheme, and will use it for uploading the logs and other data to the Pacsat satellite.

- Deploy an automatic multi band/multi power HF radio beacon.

The beacon is identical to those developed by N6EK and W6ISQ for the IARU/NCDXF. It operates on 20, 17, 15, 12, and 10 meters. It was used successfully for the first time on an expedition by the Easter Island (XRØY) group. By providing a calibrated signal over the full duration of the stay at Heard Island, we will be able to perform quantitative analysis of the radio wave propagation. ·

- Deploy high powered beacons on the edge bands (10 and 160m).

These will be used primarily for guiding radio amateurs for making contacts on these difficult bands.

## **Natural Science**

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 there are no recognized human-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. We believe that with proper care, a brief visit can be made that will provide useful data while keeping the risks negligibly low.

In the absence of more detailed information, and based on similarities of latitude, we might expect the ecosystem at Heard Island to have much in common with South Georgia, for which we have some guidance [Headland, 1984]. However, South Georgia supports several hundred plants, including 26 native vasculars, 125 mosses, and 150 lichens, far more than the reported 11 plant species at Heard. Therefore, one would naturally expect the entire ecosystem to be correspondingly impoverished. It appears to be more similar to that of the Antarctic Peninsula [Moss, 1988], which lists only 18 plant species, mostly cryptogamous. The corresponding fauna is likewise impoverished: a few protists, rotifers, nematodes, tardigrades, mites, springtails, and midges.

We plan to study the cryptofauna of Heard Island. The Management Plan (1995) lists the following terrestrial invertebrate taxa identified in the Heard Island Territory (there may be a few species on this list not from HI):

1 gastrotrich  
4 nematodes  
21 rotifers  
6 annelids  
5 tardigrades  
4 cladoceres  
3 copepods  
10 springtails  
1 thrip  
5 beetles  
3 flies  
1 louse  
2 bird fleas  
18 bird lice  
1 moth  
34 mites  
1 spider  
1 snail

This distribution is clearly skewed, compared with distributions from more temperate zones. It is likely that some of this skewness is due to incomplete sampling, rather than the community structure. Thus, we might reasonably expect to find significant numbers of unrecorded species by examining communities that are not already documented. We therefore plan to conduct searches for fauna in communities that have not heretofore been extensively sampled.

There are at least three distinct communities that we want to examine:

- Meiofauna, especially in human-occupied areas

These collections in areas of former occupation are directed at testing the hypothesis that there are no human-introduced species. We will pay particular attention to sampling in and around the ruined ANARE buildings, in dumps, trash heaps, at chemical spill sites, and in previous excavations, under the hypothesis that the structures or substances could provide niches for foreign organisms.

- Scatofauna, particularly that associated with fresh scat

These collections in avian and mammal scat are motivated by interest in identifying commensals, parasites, and other obligates. We assume that these collections will have to be approved by the permitting agency (AAD), and will be limited to times and locations that cause minimal disturbance to the wildlife.

- Speleofauna, particularly that found in lava tubes.

These collections in lava tubes (and other caves if they are found) is motivated toward discovering cave-adapted and relictual species that would give insight into the response to environmental stress. We know that there are lava tubes and karstic areas on Heard Island.

This list omits the fauna in the moss, nearshore marine, glacial, and hyperthermal communities. The general procedure will be to make representative collections of deposits (soil, scat, etc.), with some onsite processing. We will carry with us sterilized containers (e.g., plastic bags and glass vials) for the samples. Extraction of the cryptofauna could be partially done during the stay on the island. Some of the sample will be extracted on shipboard during the return, and some samples will be returned intact. We expect that an extractor such as a large Berlese funnel (for dry extraction), a Baermann funnel or sand extractor (for wet extraction), and perhaps light traps will be taken. We will attempt to assess the effectiveness of the sampling onsite, and to concentrate the effort on the most useful location and procedures [Southwood, 1978].

Cordell Expeditions has a standard label format. We will attach completed labels to all samples and derivatives.

### Other potential activities

We have outlined an ambitious program for the Expedition to Heard Island. The projected team of 20 persons will be just adequate for the activities. We are, however, interested in teaming with another group with a parallel interest. Some possible activities are:

- Caving
- Birdwatching
- Marine mammal studies
- Climbing
- Communications

<b>HEARD ISLAND 1996-97</b>	
ID:	_____
by:	_____
Collector:	_____
Date:	_____ Time: _____
Location:	_____
Depth:	_____
Method:	_____
No:	_____
<b>CORDELL EXPEDITIONS</b>	
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We are especially interested in pairing with a caving group. According the Management Plan, there are lava tubes and limestone karst features. It is certain that many caves and similar features are undiscovered. Discovery and exploration of these features would provide opportunity to search for cryptofauna, as well as speleotherms.

It is known that lava tubes exist on the Azorella Peninsula, at least near Rogers Head, and probably over the whole northern portion of the peninsula, especially near Dovers Crater. This area is less than 2 km from the campsite, and therefore accessible without additional transportation.

## Heard Island Expedition 1997 (Scoping Document)



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## OPERATIONS

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### Preparation

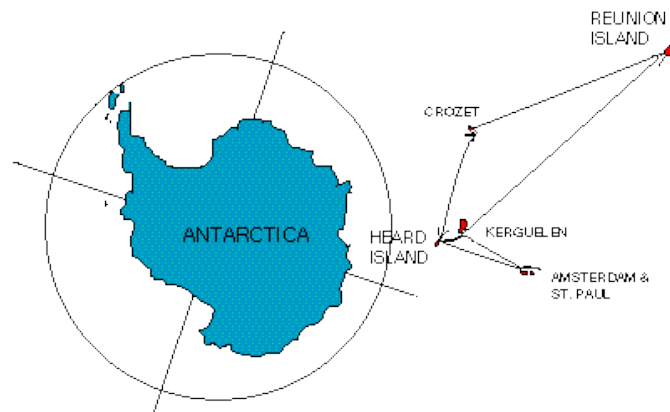
It will take all of 1996 to plan and prepare for this Expedition. The initial tasks are to assemble the team, locate appropriate transportation, and identify major financial resources. Once these are in place, we will concentrate on preparing the technical aspects, including Internet operations, onsite computer network, testing and tuning equipment, acquiring the remaining resources, and arranging travel schedules.

### Training/Checkout session

We will assemble the team 28-29 September 1996 in the San Francisco Bay area for training and checkout. The purpose is to develop personal relationships, become familiar with the specialized equipment, test electronics and instruments, assemble and mark antennas, rehearse procedures, and generate publicity. Arrangements have been made through the Mountain Medicine Group and the Wilderness Medicine Society to provide the team with training on harsh weather operations and safety. The equipment will be packed in crates and shipped.

### Transportation to Heard Island

Participants will arrange their own transportation to the point of disembarkation, currently planned to be Reunion Island. Reunion is served by air daily from Paris. As members of a scientific team, we will have access to a special fare of approximately \$800 US roundtrip.



The trip from Reunion to Heard Island will take 9 days, and will provide accommodations, gear stowage, time for preparations, and extraordinary sights. There will be a short stop at Crozet on the way down, and one at Kerguelen Island on the way back. As currently scheduled, the vessel will make a side trip to Amsterdam/St. Paul during the time we are on Heard Island.

## Schedule

The tentative schedule is as follows:

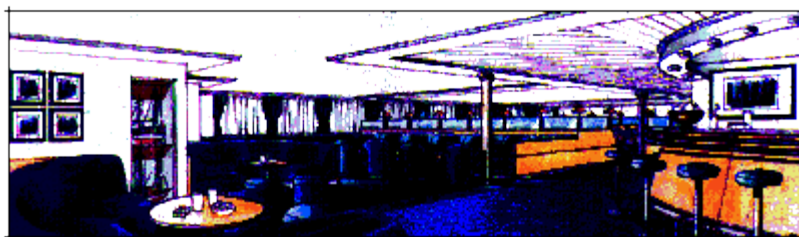
Jan 3 Leave Reunion  
Jan 8-9 Crozet  
Jan 12 Arrive Heard Island  
Jan. 13-27 Operations on Heard Island  
Jan 28 Leave Heard Island  
Jan 30 Kerguelen  
Feb. 5 Return Reunion Island

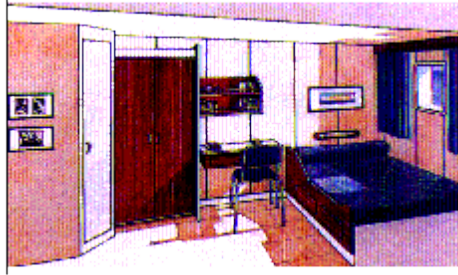
## The Vessel



[Image from the IFRTP]

The *Marion Dufresne* was especially built to supply and service the French subAntarctic islands (Crozet, Amsterdam and Kerguelen). It is a no-compromise vessel that can sail and work under any weather conditions in polar seas. It has the most sophisticated safety features, including polar life crafts, helicopters, and complete electronics. It is used to transport mission personnel, tourist passengers, and all types of cargo including food and motor-fuel supplies. The ship was put into service on 23 June 1995, and has visited Heard Island, 200 miles from Kerguelen, several times.





Specifications of the *Marion Dufresne* are as follows:

- General

Length: 120.5 m

Beam: 20.6 m

Depth at upper deck: 12.8 m

Draft: 6.95 m

Displacement: 10,380 tons

Deadweight: 4,900 tons

Cruising speed: 15.7 knots

- Crew and Passengers

Crew: 25

Passengers: 110 in 59 cabins equipped for tourists, mission personnel, scientists

Dining rooms: 2, capacity 62 and 16 places

Theater: 130 people

Video/conference rooms

Library: email capacity

Hospital: fully equipped, including operating room

- Freight

Capacity: 2,500 tons (5,600 cubic meters appr)

Space for 110 TEU (20 ft) containers

Cold stores both fixed and in containers

Fuel cargo capacity (for the bases): 1,170 tons

Refueling pumping system

Fresh water: 550 tons capacity, with 3 boilers (generation up to 44 tons/day)

Kerosine for helicopters: 30 tons

Oil: 100 tons

Fuel for landing craft: 140 tons

Special cargo areas for flammable goods

- Handling Gear

2 general purpose craft for transfer and landing of passengers, towing and hydrography

2 barges for beach landings (capacity: one 20 ft container or 23 people)

Inflatable boats: several

Semi rigid inflatable

Flexible pipes for loading/unloading of liquids with 200 cu-m/hour capacity

Helicopters: 2 in hangers (one Alouette with a cargo net lifting capacity of 300 kgs)

Several floating towable docks, to land bulk equipment.

2 high speed 25 ton cranes (45 tons if used as twin cranes)

Logistical/oceanographic crane: 18 ton

2 service cranes: 12 ton

- Propulsion:

3 diesel-generating sets, total 8,250 kW (2x 8 cylinder Wartsila and 2x 6 cylinder Wartsila)

2 AC synchronous electric propulsion motors: 2,650 KW ea

2 propeller shafts

2 flap rudders

1 bow thruster of 750 KW

- Electricity:

3 diesel alternators + emergency generator of 300 KW

220/380V standard EU current, distortion +- 6%

220V stabilised of 2x 40 KW for scientific equipment

- Equipment

Integrated navigation system: GPS, gyro, log, underwater acoustic equipment, multilevel current meters

Dynamic positioning (also called autopositioning, capable of holding the ship fixed in place even at 65 knot winds)

Bathymetric multibeam sounder

Seismic: 2 air onboard compressors

Physical oceanography: double seawater pumping system, 2 complete bathysounders

Data processing: 3 networks, workstations, storage system and video studio

Labs: 31 labs of 650 square meters total surface + additional lab containers

Meteorology: receipt of fax and satellite images

Telecom: Inmarsat M, Inmarsat C, HF, VHF

Network: music, video network, internet, e-mail , remote surveillance equipment, telephone,



intercom

Computers: Macintosh and PC compatibles with servers

- Handling and lifting gear for scientific tests

30 ton winch

3 storing drums for 7,500 m of cable of 30 mm diameter

2 10-ton A frames

3 manoeuvring winches, 18T and 3 T cranes

2 mobile 20-ft platforms including trawl fishing equipment

Handling system of calypso high length core sampling

Ilot system for lightweight sampling

The *Marion Dufresne* was built by Ateliers et Chantiers du Havre in France. It is owned by Compagnie Generale Maritime and chartered by TAAF (Terres Australes et Antarctiques Francaises) and IFRTP (Institut Francais pour la Recherche et la Technologie Polaires). It is certified by the 'Bureau Veritas' under the following mark: I 3/3 E \*Special purpose ship - supply and oceanographic research vessel High Sea - ACA - AUT PORT - F - RMC V - ALM - ALS

### **General operations on Heard Island**

Expedition personnel will assume personal responsibilities for camp management, service and maintenance, environment, and safety. Daily meetings will be held to discuss scientific results, operations, and plans. Team members will have opportunity to explore the island and carry out individual projects if desired.



The shelters are of the same type as used on the Peter I expedition (see the book 3YØPI Peter I 1994 DXpedition, by R. W. Schmieder). We will have two shelters 12x24 ft, one 12x12, and two 8x8 ft., plus a variety of additional smaller wood shelters from storage and operations. These shelters are made by [Exploration Products](#).

### **Radio equipment**

We have assembled a large amount of equipment for the expedition. The radio amateur setup consists of five full legal power HF stations, one barefoot HF station, one HF beacon on the ship,

a full power VHF/UHF autotracking satellite station and an Inmarsat satellite telephone.  
The antennas include: ·

- Monoband yagi antennas for 15m (153CD), 20m (203CD) and · 40m (402CD) 3 ea
- Multiband yagi antennas for 10-15-20 (A3S) and 12-17-30 (A3WS) 4 ea
- ON4UN designed monoband vertical antennas for 80m and 160m 2 ea
- Multiband vertical for 40-80-160 (Battlecreek Special) 1 ea
- Monoband long yagis for VHF and UHF 2 ea
- Multiband verticals (R7) 2 ea
- Inmarsat satellite dish, local VHF antennas, spares 4 ea

The radios include:

- FT900/AT with full filters and power supplies 3 ea
- FT1000MP with full filters 3 ea
- Satellite VHF/UHF radio 1 ea
- Spares 4 ea

Linear amplifiers include:

- ETO Alpha 91B 3 ea
- VHF and UHF amps 2 ea

Supporting equipment includes:

- 5 kW Honda generators 3 ea
- 7 kW Coleman generator 1 ea
- Keyers, paddles, boomsets 1 set/station
- Compaq 486/66DX2 computers with radio interface+networking 1 /station
- Computers for internet links and Pacsat transmissions 2
- Spare computers 2 ea
- towers, tripods 1/yagi
- band pass filters 4 sets

## **Communications operations**

We will adopt many of the innovations from the 1995 Easter Island/Salas y Gómez expedition (XRØY/Z), and extend them. These include:

- Newly designed high performance lowband vertical antennas

John Devoldere, ON4UN, designed two new monoband antennas for 80 and 160m. Each of these 17m high verticals has two toploading wires and two (only two) elevated radials. We aim to test these antennas against the more conventional and proven technology of the inverted-L designed Battlecreek Special.

- Extensive use of radio beacons

A switchable automatic beacon will run 24h/day, switching over 20-17-15-12- 10m continuously, each time giving its full call, and a series of tones at 100W, 10W, 1W and 0.1W. This beacon will run from the ship, with an R7 vertical antenna. As the beacon will be started from the moment we land (i.e., before the radio operation starts), our pilot stations will be able to give us feedback on the existing radio propagation to all parts of the world, and compare the observed openings to the predictions. One other high powered beacon will run on 160m during the night and 10m during the day. This beacon will transmit its callsign in CW at short intervals. Using a beacon on these edge bands will reduce the time spent calling in vain on 10/160 when there is no propagation. The radio operators will be informed on higher/lower bands of openings by the amateur audience. ·

- High speed interference free computer logging network

Though computer logging nor networking is not new to amateur stations, it is the first time such technology would be fully used in a DXpedition. Each stations would have the computer linked to the radio so it can read/change the band/mode information. These data, together with the log data, are transmitted over a RS232C line with level converters and RFI filters to the other computers. Thus each computer can see the activity (stations logged, frequency) of all other stations. As the radio stations will be spread in pairs of two over a vast area, the communications network between them is important to exchange band/station information, and even allow limited conversations (Gabs) between the different operating sites. ·

- High speed data link via an autotracking Pacsat station

The communication with the pilot stations spread over the world, the transmission of digital audio, images and video, the radio log data and mail to/from the pilot stations goes over 9600 baud packet radio links via Pacsat radio amateur satellites. The data are automatically uploaded during one pass, and downloaded in Belgium during the next, after which it is forwarded to Internet. ·

- Backup datalink via Inmarsat

As backup for the Pacsat link, full function internet connections will be established via Inmarsat.

- e-QSL service

A vast number of radio amateurs have Internet e-mail addresses. 14,000 e- mail addresses are stored in a database which is used to send off a confirmation of a radio contact over e-mail.

- e-Log server and Plog server

We will make two DXpedition logs accessible both via Internet e-mail and via Packet Radio Mail. Sending a simple mail with a callsign in the body text, to specified addresses will return the details of all radio contacts for that callsign. The DXpedition radiologs databases will be updated every day, during the operation.

- Internet Web page

A WWW homepage will be updated every day with information on the expedition and with digitized pictures from the expedition site.

- Digital audio recording

We plan to make audio recordings of at least some of the on-air radio operations.

- Extensive pilot station system

Amateur pilot stations in Japan, Europe, and USA will monitor our transmissions. They will give us daily feedback on our performance and we will update them with information from the island. This information will be distributed by the pilots over Internet, HF infonets and the vast PBBS mail system all over the world, which at the same time is also used to gather information on our performance from our audience. ·

- Use of Digital Signal Processing (DSP) in Morse and digital modes

We have DSP enabled radios and use external DSP filters to enhance received signals in Morse and digital modes.

- Onsite and off-line analysis of the computer radio logs

Every day, the computer logs will be analyzed both on the expedition site and by the main pilot station to assess the performance of the radio operation, and to compare the acquired information on HF propagation vs the propagation predictions.

## **Scientific operations**

Elsewhere we have described the operations regarding collection of cryptobiological specimens. These may be modified if we become associated with another group.

## **Medical and safety**

We will have at least one GP physician and one EMT in the team. We are working with the MARCO group to develop a first-aid kit for expeditions, and will use it if it is available. We will have training on first aid, CPR, and harsh-weather survival. We will implement a set of procedures for preventing and dealing with emergencies.

## **Emergency**

In case of emergency or threat of emergency, the Expedition Leaders have the authority to terminate or modify any operation, participation in the expedition by any person, and to require procedures necessary for safety of persons and property. All participants must provide to the

Expedition any information that may be necessary in the event of an emergency, such as medications, medical history, and preferred physicians.

### **Departure and return**

We will remove every trace of our occupation when we break camp. The operations will be staged to prevent leaving anyone in a vulnerable position. We will complete documentation and logs during the return voyage.

### **Post expedition activities**

All scientific records from the expedition, including specimens, photographs, logs, and other data, will be secured by the Expedition Leader. Personal photographs, video, sound recordings, and other personal records will remain in possession of the participant who creates them. Specimens and other data that may be desired or required by Australian institutions will be transferred to appropriate custody by the Expedition Leader(s). All laws and regulations regarding international transport of plants, animals, or other sensitive objects, will be respected.

### **Backup plan**

We will be developing alternative plans for a major event that prevents operations from Heard Island. It is likely that we will have authorization to operate radio on the other islands (Crozet, Kerguelen) that we will visit.

## Heard Island Expedition 1997 (Scoping Document)



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# MANAGEMENT OF THE PROJECT

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### **Project Directors/Expedition Leaders**

The Heard Island Project is being implemented by the Project Directors:

Robert Schmieder KK6EK  
Peter Casier ON6TT

The Project Directors will manage the Project, and they will also act as the Expedition Leaders, i.e., they will lead the actual Expedition to Heard Island. They have the following authorities and responsibilities:

- Publish this Scoping Document
- Establish and empower an Executive Board (see below)
- Establish schedules and logistics
- Appoint persons to take certain responsibilities
- Raise funds and make financial commitments and contracts
- Interface with other participating groups
- Determine the course of the activities during the expedition
- Determine the disposition of scientific materials
- Interface with public information agencies
- Generate sale items such as book, video, and souvenirs.

Robert Schmieder is primarily responsible for permits, logistics, safety, schedules, camp operations, scientific programs, and documentation. Peter Casier is primarily responsible for radio operations, electronic gear, communications, pilots stations, public relations, and logs. Both will be responsible for team building, fundraising, training, international liaison, and team functioning.

The Project Directors reserve for themselves all authorities and responsibilities not specifically stated for the Executive Board (see below).

### **Executive Board**

The Project Directors hereby establish and empower an Executive Board, consisting of the Project Directors plus the following:

Ralph Fedor KØIR  
Bob Fabry N6EK  
Carlos Nascimento NP4IW

The Executive Board will have the following authorities and responsibilities:

- Approve participants
- Approve major logistical and procedural plans
- Approve major financial arrangements
- Approve joint participation with other groups
- Make "go/no-go" decisions on specified dates (see Schedule)
- Cancel the Expedition (see Policies/Cancellation)

The Board will function by simple majority vote. Anyone, whether a participant in the Project or not, has the right to bring any matter involving the Project before the full Board. By vote of at least 4 to 1 any Board member may be replaced by a different person.

### **Advisory Board**

In order to provide broad oversight and liaison with various communities with interest in the project, we establish an Advisory Board, consisting of the following:

- Sir Edmund Hillary Honorary Expedition Leader, New Zealand
- John Devoldere ON4UN Engineer, Author, Belgium
- Prof. Harold Heatwole Prof. Biology, Univ. N. Carolina, USA
- Dr. James Maxwell W6CF ARRL, USA
- Stephen Martin Researcher, Author, Australia
- Neil Penfold VK6NE Pres., Wireless Institute of Australia
- Dr. Robert Smithwick W6JZU MARCO, USA
- John Troster W6ISQ QCWA, USA
- Yasuo Miyazawa JA1AJT Japan (tentative)

The Advisory Board will have no responsibilities or powers, but will be kept informed and may offer advice and make recommendations.

## Heard Island Expedition 1997 (Scoping Document)



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## POLICIES

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### **"The Heard Island Project"**

The term "Heard Island Project" (or "HI Project" or "Project") means "The 1997 Cordell Expedition to Heard Island." This term means the entire project, including preparation and post-expedition activities, not just the actual voyage to, and visit at, Heard Island.

### **"The Expedition"**

The term "Expedition" refers specifically to the portion of the Heard Island Project that is the actual voyage to and from Heard Island, and the time on the island. The actual dates are tentatively 3 Jan. - 5 Feb. 1997.

### **Safety**

The overriding consideration in all plans and operations will be safety of personnel and property. While some risk is inherent in an exploratory venture such as this, we will make no plan and take no action that involves significant risk to life, limb, or property. Plans for emergencies and contingencies will be an integral part of this project.

### **Political**

Heard Island is under the jurisdiction and protection of the Commonwealth of Australia. Therefore, the Expedition will be brought into alignment with the policies and objectives of the appropriate Australian governmental, scientific, and regulatory organizations. The Expedition will respect the rights, interests, and authorities of all persons with legitimate interests in Heard Island.

### **Site resources**

The Expedition will take exceptional measures to prevent damage to any resource on Heard Island. It will be policy that any activity that causes significant impact to a sensitive resource will be terminated unless and until such impacts can be prevented.

### **Financial resources**



The Executive Board is empowered to determine that sufficient financial resources exist to satisfy the goals and policies of the HI Project. In this event that there are not sufficient resources, the Board can opt to terminate the Project and cancel the Expedition.

### **Financial management**

Finances will be managed by Cordell Expeditions. A separate account has been opened for these monies, and will be closed upon completion of the Project. Residual monies left at the completion of the Project, will be distributed among the participants. The priority for this distribution will be: 1. The 1995 team members, up to the amounts they lost; 2. KØIR, up to the additional amount he lost; 3. The entire 1997 Expedition team.

### **Donations**

Donations from individuals will be held until the Expedition is complete. In the event of noncompletion, these donations will be returned. Donations to Cordell Expeditions are tax-deductible and will become the property of Cordell Expeditions. Donations for the HI Project will only be used for the HI Project.

### **Intellectual property**

Photographs, video, sound recordings, field notes, sketches, drawings, paintings, and similar materials produced in connection with the Project are the property of the creator, who holds the copyright under the law of the respective country. The Project is granted the right to freely copy any or all such materials for purposes of enhancing the and its programs, together with the right to royalty-free use in publications, programs, and similar promotional activities. The Project does not have the right to distribute such materials to third parties without consent of the copyright holder. Use of such materials by any member of the Project is subject to the consent of the copyright holder.

### **Scientific property**

Cordell Expeditions is the owner of scientific materials resulting from the Heard Island Project. These include biological specimens, soil, water, and rock samples, logged data such as radio logs, meteorological and bathymetric records, photographs, videos, sound recordings, and similar materials that are primarily scientific data, historical materials, either records or artifacts, and all other similar materials that are reasonably part of the scientific record of the Expedition. The creator or supplier of such records has the right to freely copy the materials (at personal expense) for any use not inconsistent with the basic scientific nature of the Expedition.

### **Expedition property**

Equipment borrowed for the Project will be returned at the conclusion of the Project. Equipment donated to Cordell Expeditions remains the property of Cordell Expeditions. Equipment purchased using Project funds will be disposed by consensus of the participants.

## **Personal property**

Some personal gear and materials will be shipped and used in common with the Expedition. The owner of such gear and materials assumes the responsibility for controlling and protecting such gear and materials.

## **Personal satisfaction**

Among the primary goals of this expedition is personal satisfaction of the participants. The Heard Island Project will be managed and executed with special regard to this aspect, and with mechanisms for enhancing it. It will be the policy of this expedition to provide full information about the status and plans to anyone and any organization.

## **Liability**

All participants in the Expedition will mutually exempt every other participant and organization, specifically including the organizers of the HI Project and Cordell Expeditions, from any liability whatsoever.

## **Authorities**

Actions taken by the Executive Board and Expedition Leaders will be final. Participants agree to be bound by the rules, decisions, and directives of the Project Directors and the Executive Board.

## **Cancellation**

In the event the Project is unable to assemble the resources required to complete the Expedition, the Executive Board is authorized to cancel the Expedition and terminate the Project. In this event, donations from individuals will be returned, borrowed equipment will be returned, purchased equipment will be sold, and financial obligations will be paid from the cash reserves. Any residual cash will be distributed among the participants.

## Heard Island Expedition 1997 (Scoping Document)



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## EXPEDITION TEAM

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We are pleased to announce the radio team for the 1997 Heard Island Expedition:

EA8AFJ Michel Sabatino  
HB9AFI Kurt Wetter  
HB9AHL Willy Rusch  
HB9BHL Hans Burki  
KØIR Ralph Fedor  
K4UEE Bob Allphin  
K9AJ Mike McGirr  
KK6EK Robert Schmieder  
N6EK Bob Fabry  
N6MZ Michael Mraz  
NP4IW Carlos Nascimento  
OE9AMJ Arno Metzger  
ON5NT Ghis Penny  
ON6TT Peter Casier  
PA3DUU Arie Nugteren  
RA3AUU Igor ("Harry") Booklan  
VK2JDM (VK2TQM) David Muller  
W8FMG Wes Lamboley  
WØGJ (WAØPUJ) Glenn Johnson  
K3VN (WA3YVN) Al Hernandez  
9V1YC James Brooks

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### Cost to participants

The cost to Team Members is \$10,000, payable on the following schedule:

Deadline Amount due  
31 Jan 1996 \$1000  
1 May 1996 \$4000  
15 July 1996 \$5000

The fee includes all costs during the Expedition, from the point of departure to the point of return, with the following exceptions:

- Exceptional personal supplies

- Emergency services beyond first aid
- Extraordinary transportation
- Film, video and recording tapes, etc.

The fee is not refundable, except in the case that the Expedition is canceled by decision of the Executive Board, in which case residual monies will be returned to the Team Members. If a Team Member wishes to withdraw, an acceptable replacement participant could take his or her place, and the payments can be applied to the replacement. Responsibility for finding the replacement rests with the Team Member (but note that a replacement Team Member must be approved by the Board). If there is no replacement, the monies are forfeit to the Expedition.

### **Responsibilities**

Team Members will provide the following:

- Travel to/from the point of departure (currently planned as Reunion Island)
- Personal clothing (including polar clothing)
- Sleeping gear (sleeping bag, pillow, etc.)
- Special personal food (including special personal liquor)
- Personal cameras, film, processing.

The following documents will be required for Team Members:

- Liability waiver: All Team Members agree to mutually hold themselves harmless.
- Copyright agreement: Team Members retain copyright. The Project has rights to copies of documents (photographs, video, software, etc.) and unlimited noncommercial use thereof.

### **Withdrawal and termination**

Any Team Member may withdraw at any time, and may refuse to participate in any activity, without need of stated reason. The Expedition Leader(s) may exclude any Team Member from any activity for clear stated cause. The Executive Board may terminate a Team Member's participation in the Project for clear stated cause. If a member is terminated, his monies will be returned, minus the \$1000 deposit.

## Heard Island Expedition 1997 (Scoping Document)



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## PERSONNEL

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### The Project Team

Successful completion of the 1996-97 Heard Island Project will require the cooperation and devotion of many persons. We have established the following categories of people:

- Honorary Expedition Leader
- Advisory Board
- International Coordinators
- Project Directors
- Executive Board
- Expedition Team
- Technical Support Team
- Pilots
- Anchor stations
- Support team

#### **Honorary Expedition Leader**



Sir Edmund Hillary  
Auckland, New Zealand

## **Advisory Board**

John Devoldere ON4UN  
Author of radio books, Belgium

Prof. Harold Heatwole  
Department of Zoology  
Campus Box 7617  
North Carolina State University  
Raleigh, NC 27695

Stephen Martin  
Level 10  
State Library of New South Wales  
Macquarie St.  
Sydney 2000, Australia

James Maxwell W6CF  
P. O. Box 473  
Redwood Estates, CA 95044 USA  
[jmaxwell@arasmith.com](mailto:jmaxwell@arasmith.com)

Neil Penfold VK6NE  
Pres., Wireless Institute of Australia  
2 Moss Court  
Kingsley 6026  
Western Australia

Robert Smithwick W6JZU  
25215 La Loma Drive  
Los Altos Hills, CA 94022

## **Project Directors**

Robert W. Schmieder, PhD, KK6EK  
4295 Walnut Blvd.  
Walnut Creek, California 94596 USA  
tel/fax: (510) 934-3735  
[cordell@ccnet.com](mailto:cordell@ccnet.com)

Peter E. O. C. Casier, ON6TT  
Oude Heerbaan 30  
B-9230 Wetteren  
Belgium  
[pcasier@innet.be](mailto:pcasier@innet.be)

## **Executive Board**

The Board consists of the Project Directors plus the following:

Bob Fabry, PhD, N6EK  
1175 Colusa Ave.  
Berkeley, CA 94707  
(510) 527-7655  
[fabry@basisinc.com](mailto:fabry@basisinc.com)

Ralph Fedor, MD, KØIR  
3437 Granite View Rd.  
St. Cloud, MN 56301  
tel: (612) 253-2257  
fax: (612) 253-0428  
[rfedor@cloudnet.com](mailto:rfedor@cloudnet.com)

Carlos Nascimento, PhD, NP4IW/6  
2061 Magnolia Way  
Walnut Creek, CA 94596  
(510) 601-2822 (w)  
(510) 935-2768 (h)  
(510) 655-8453 (fax)  
[carlos\\_george-nascimento@cc.chiron.com](mailto:carlos_george-nascimento@cc.chiron.com)

## **Technical Support Team**

VE7TCP-Lyndon Nerenberg (runs the e-mail logserver)  
if urgent: [lyndon@orthanc.com](mailto:lyndon@orthanc.com)  
if not urgent: [ve7tcp@ve7tcp.ampr.org](mailto:ve7tcp@ve7tcp.ampr.org)

ON1AIG - Andre Marchandise (runs the Pacsat groundstation)  
e-mail: [on1aig@amsat.org](mailto:on1aig@amsat.org)

ON1BEJ - Bert Dejonghe (runs the PBBS logserver)  
[bert.dejonghe@sophis.eunet.be](mailto:bert.dejonghe@sophis.eunet.be)

## **Pilots**

ON4UN - John Devoldere (Europe and Pilot coordinator)  
e-mail: [john.devoldere@eunet.be](mailto:john.devoldere@eunet.be)  
PBBS: ON4UN @ON4AWP.BEL.EU  
Cluster: ON4DXB

N1DG (WB2DND) - Don Greenbaum (East Coast)

e-mail: don@aurumtel.com

Cluster: WA1G

pbbs: n1dg@ns1n

KØEU - Randy Martin (Mid-West South)

e-mail: RandyMartn@aol.com

Cluster: KYØA

WØEK (WDØAEK) - Bob Bruner

P.O. Box 252

Avon, MN 56310-0252

(320) 573-2613

email: bbruner@upstel.net

BBSBBS: WD0AEK@NF0H.MN.USA.NA

Packetcluster: WD0AEK@K0IR

W2IJ (WA2FIJ) - Jay Kobelin (West Coast)

e-mail: pcb4u@ix.netcom.com

Cluster: N7QQ

W4WW (N4PYD) - Scotty Neustadter (South)

Huntsville Hamfest Chairman

9710 Dortmund Drive

Huntsville, AL 35803

scotty@iquest.com

JH1ROJ - Isao Numaguchi (Japan)

Email: isaonuma@nisiq.net

tel (home) : +81 482 54 8071

fax (home) : +81 482 54 9192 (phone and manual fax)

tel (country house) : +81 287 78 0569 (phone and manual fax)

mobile phone : +81 30 33 99382Support team



## Heard Island Expedition 1997 (Scoping Document)



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## FINANCES

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### Expedition budget

#### EXPENSES (in thousands of dollars)

Vessel	200
Gear	20
Shipping	15
Fees, (insurance, storage, etc.)	5
Living facilities	5
Food	10
Fuel	5
Administration	10
Travel	5
Scientific supplies	10
Computers	10
Safety and sanitary	5
QSLs	10
Contingency	10
Total	320

#### INCOME

Team members	200
Foundations	35
Private	35
Corporate	30
QSLs	20
Total	320

### Where to send contributions

Your contributions for the 1996-96 Heard Island Expedition are welcome and needed. Full credit will be given for all contributions. You can direct them to any of the following:

Northern California DX Foundation  
P. O. Box 2368,  
Stanford CA 94309-2368 USA

Cordell Expeditions  
4295 Walnut Blvd.  
Walnut Creek, CA 94596  
(510) 934-3735  
cordell@ccnet.com

Heard Island Europe  
Peter Casier ON6TT  
PO BOX 1 B-9090  
Melle, Belgium

### **Corporate Sponsors**

We are seeking corporate sponsors for this project. We can guarantee tax-deductible status, full credit, and considerable exposure to the radio community. We would be interested in testing equipment and techniques, and evaluating performance. We will guarantee safe return of equipment on loan.

### **Souvenirs**

We will have a variety of [souvenirs](#) available, including mugs, tee-shirts, and eventually the video and maybe a book. At this time we have the Expedition mugs.

## Heard Island Expedition 1997 (Scoping Document)



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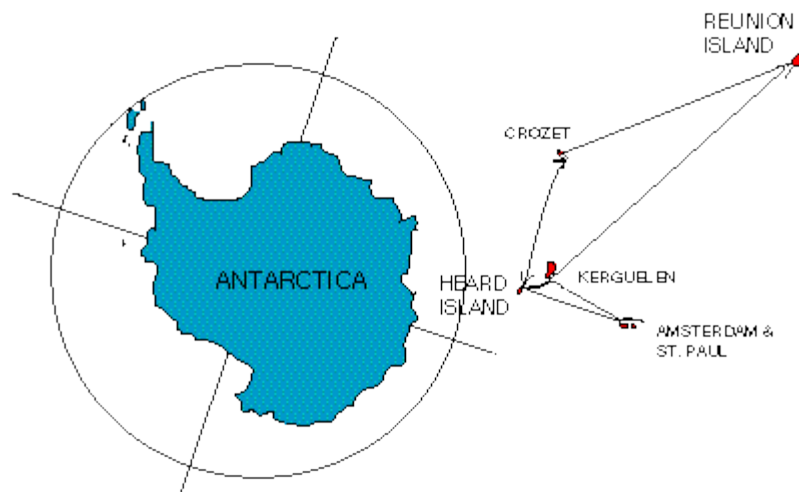
## SCHEDULE

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### Expedition schedule

The tentative schedule for the Expedition is as follows:

- Jan 3 Leave Reunion
- Jan 8-9 Crozet
- Jan 12 Arrive Heard Island
- Jan. 13-27 Operations on Heard Island
- Jan 28 Leave Heard Island
- Jan 30 Kerguelen
- Feb. 5 Return Reunion Island



### Project chronology

The Expedition will be carried out during Jan.-Feb., 1997. The following sets forth a rough monthly schedule for the Project:

- December 1995 Announcement
- 15 January 1996 Initial team selection
- 31 January 1996 Final team selection

February 1996  
 March 1996  
 April 1996  
 May 1996  
 June 1996  
 July 1996  
 August 1996  
 September 1996 Team training.  
 October 1996 Gear shipped  
 November 1996  
 December 1996 -January-February 1997 Expedition

During the weekend of 28-29 September, 1996, the team will meet in the San Francisco Bay Area to assemble the gear, test the equipment, receive training in emergency procedures, and pack the crates for shipping. This meeting will serve to establish interpersonal relationships, develop team procedures, and ensure safety.

### **Decision points**

A "go/no-go" decision will be made by the Executive Board several times during the course of the planning. This decision will be based on the likely *available* resources compared to the likely *required* resources. If it appears that the project cannot obtain the required resources, it will be cancelled. The process of cancellation is described in "Policies." The dates and issue for the go/no-go decisions are:

Date	Criterion
15 Jan 1996	Initial team is qualified (moved to 31 January)
1 May 1996	Permit, transportation, schedule are in place
15 July 1996	Financing is adequate
1 October 1996	Preparation is adequate and gear is ready to ship
1 January 1997	Team is ready

The Executive Board will issue a statement on each of these occasions detailing the decision and supporting information.

## Heard Island Expedition 1997 (Scoping Document)



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## CORDELL EXPEDITIONS

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CORDELL EXPEDITIONS

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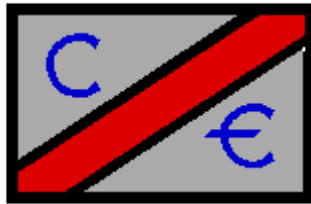
### [Cordell Expeditions](#)

4295 Walnut Blvd.

Walnut Creek, CA 94596

(510) 934-3735 (voice and fax)

e-mail: [cordell@ccnet.com](mailto:cordell@ccnet.com)



[Cordell Expeditions](#) is a tax-exempt, nonprofit research association operating under the laws of the State of California and the U. S. Department of Internal Revenue. Founded in 1977, the group has carried out a series of research expeditions every year since 1978.

The work involves exploring and describing remote sites, principally offshore submerged marine sites that support extensive biological communities. The motivation for the work is to carry out field work to generate primary information about the sites, so that they can be protected and rationally managed.

The first project of Cordell Expeditions was to explore and describe Cordell Bank, a shallow rocky feature about 50 nautical miles NW of San Francisco, California. As a result of this 10-year project, the U. S. Department of Commerce designated it as the Cordell Bank National Sanctuary. It is now protected by an Act of Congress.

Other expeditions by the group have been to the Farallon Islands, Noonday Rock, and Fanny Shoal; the coast near Pt. Sur, California; Rocas Alijos and Guadalupe Island (Baja California); Peter I Island, Antarctica; and Easter Island/Salas y Gómez.

Books resulted from the these expeditions (all by R. W. Schmieder) include:

- *Ecology of an Underwater Island*
- *Edward Cordell and the Discovery of Cordell Bank*
- *Rocas Alijos*
- *3YØPI Peter I Island. The 1994 DXpedition*
- [\*DX-Aku: Messages from the Easter Island Expedition\*](#)

The work has resulted in the discovery of more than 30 new species, significant uncharted topographic features, and many first observations of environmental conditions. A large collection of specimens, and photographic archive, and a large number of popular articles are additional results of the expeditions. It is expected that the expedition to Heard Island will produce a large amount of new information. The collection of biological specimens will be made available to specialists for display and research. A general interest book, a video, and various articles will be published.

Recently a major part of the focus of the expeditions has been amateur radio. Expedition Leader Bob Schmieder, KK6EK, has been a member of two teams that have received the DXpedition of the Year award at the Dayton (Ohio) hamfest.



## Heard Island Expedition 1997 (Scoping Document)



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## VITAE OF THE TEAM MEMBERS

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### **Bob Allphin, K4UEE**

4235 Blackland Dr.  
Marietta, GA 30067  
Tel: (770) 953-3828  
Fax: (770) 953-6288  
[mallphin@aol.com](mailto:mallphin@aol.com)

Bob, 51, was licensed in 1958 at the age of 13. Today, he is "Top of the DXCC" and only needs one country to complete DXCC (phone) and DXCC (CW). He is an active contester and has participated in numerous DX contests from his QTH in Aruba (P40R). In addition to many 1st and 2nd place finishes, he has set five Single Band/Single Operator world records,. Bob is also a DXpedition organizer and participant, using such calls as XF4DX, AH1A, XRØY, CEØZ, VP2KC, VP5KMX, K9GL/VP2V, J87J, PJ9W, and ZPØY. In all, Bob has visited 47 DXCC countries and operated from 22 countries. He is a low band enthusiast, and prefers CW. Other callsigns he has held are: KR6LY, VP2KAE, ZF2FX, J87UEE, J34UEE, T30EE, K4UEE/VP2V, K4UEE/C6A, 3A/K4UEE, PJ2/K4UEE, ZP5/K4UEE, TA1/K4UEE, HSØ/K4UEE, VR2K4UEE, KH6/K4UEE, and CE3/K4UEE. Recently, Bob participated in WRTC '96 (World Radio Team Championships), along with his partner N6IG, finishing 5th in the championship. Professionally, Bob is Division Sales Manager and Senior Vice President in Wood Logan Associates, a company that markets mutual funds and annuities. He has been married 29 years, and has 2 grown children. He has a B. S. degree from Auburn University and an M.B.A. from Golden Gate University.



**Igor Booklan ("Harry"), RA3AUU**

P. O. Box 18

Moscow 109457

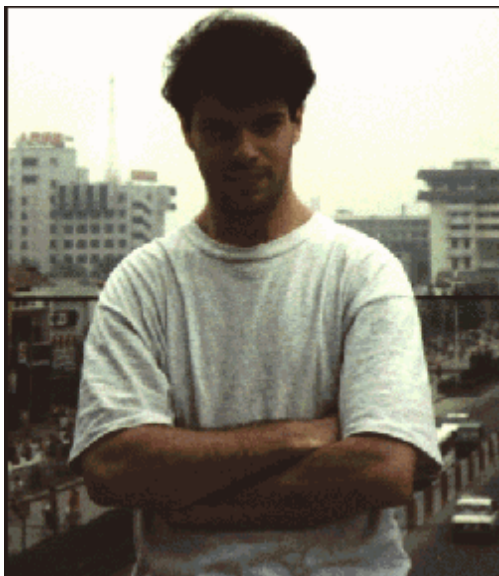
Russia

Tel and Fax: +7 095 172 6391

[ra3auu@srr.ru](mailto:ra3auu@srr.ru)

Harry is an electronics engineer, and works for a communication company in Moscow. At age 27, he is the youngest on the team. Licensed since 1982, Harry is a versatile fast cw and phone op, experience DXpeditioner and contester (5BDXCC, 5BWAZ, DXCC Honor Roll, DXCC 160). He was active as RV4F/RA3AUU, 4L4F, RU6L, RK3B, RU3A, R3HQ, and guest op of OT4T. Then it was DXpedition time: XYØRR, 1SØRR, XV3UU, XE2/RA3AUU, XF4M, and most recently R1MVI, in Sept. 1995. He used to compete in the ex-USSR radio pentatlon competition, and became a champion for far east USSR.





**James Brooks, 9V1YC**

26 Jalan Asas

Singapore 678787

Singapore

Tel: (65)-766-0201

Fax: (65)-766-2040

jamesb@po.pacific.net.sg

[9V1YC@equator.lugs.org.sg](mailto:9V1YC@equator.lugs.org.sg)

James has lived in Singapore for 7 years, and is a serious CW contester. He set Asian records at VS6WO 2 years in a row and the low-power Asian record a few years back for WPX CW. He also holds the callsign XUØAA in Cambodia for his expedition during 1990. Previous expeditions: KB1CM/KH8, KB1CM/4X, 5W1FR, ZK1XM, VU2ZAB, VR2/KB1CM. James currently owns a video post & design company in Singapore that specializes in documentaries (corporate & commercial), TV commercials, Openings, and Graphic packages (animation). Travel to China on occasion for filming, but most of his work is regional SE Asia & Hong Kong. He was previously an antenna design engineer with an Australian/SE Asian manufacturer of broadcast & cellular antennas. Following that was head of video post production (engineering) for the Singapore Broadcasting Corp until 1995, when he started his current company. He speaks English & Mandarin (Chinese) in addition to a little bit of other Chinese dialects.



**Hans R. Burki, HB9BHW**

Chelleracherstr. 2

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Born 1939. Apprenticeship as a Precision-Mechanic in the textile-branch. Served as Radio-telegraphist in the Swiss-Army. 1960 Swissair employed me as an Aircraft-Mechanic. Aircraft type where DC-8, CV 990 and Caravelle. From 1963-65 I emigrated to Australia. Then again with Swissair, stationed in London as a Station-Mechanic. Married 1966. We have 2 children. 1969 Swiss Aviation School where I finished to be Flight-Engineer on DC-8 (6 years) later on DC-10 (16 years). During the 23 years of flying mainly long-range, I was teaching aircraft systems to Cockpit personnel. 1992 I left Swissair and started a new job with Schumperlin Avionics. I do lots of mechanical repairs and also some electronics on HF and satellite-equipment.



**Peter E. O. C. Casier, ON6TT**

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Licensed since only 1989, Peter is mainly a phone and RTTY op. He is an active contester and expeditioner. He was the co-organiser of the 3YØPI effort. Previously, he was also part of the AH1A and FOØCI expeditions and operated as 5X1T, 9U5CW, 5Z4DU, 9Q5TT, 4U9Q, D3T, D2TT, TU4FE, T30AJ, VK6ATT, VP8BZL, VP8CPH, VP8CBE, 4K1F, C30EMA, 4U1ITU 4UØITU, 7Q7XT, 4U/ON6TT, /C3, /LX, /GU, /GJ,... He contested from OT2T, OT3T, OT4T, OT5T, OT2A, OQ7AR,...., and holds a number of national and continental contest records. He is an officer of the European DX Foundation and a member of the CQWW DX contest committee. Peter was trained as a printing engineer, always worked in the computer world before switching over to become a telecom consultant for the UN and the Red Cross. These days, he is the regional telecoms manager for the United Nations World Food Programme, based in Uganda.



**Robert Fabry, PhD, N6EK**

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Bob is retired from the faculty of the University of California, Berkeley. Among other accomplishments at the University, he founded, and for many years led, the project which created Berkeley UNIX. Licensed since 1957, Bob is a phone and cw contest op. He has been active as VP5Y, N6EK/C6A, XE2GBD, N6EK/VE7, N6EK/1 (NA-148), HD8D, N6EK/HC8, XE2GBD/XF3 (NA-90), J76EK, XE2/N6EK/XF1 (NA-189), 3D2EK (OC-121/OC-156) and AL7EL/KH9. He is active in many contests and has won California in the the single-operator all-band category in the SSB World-Wide DX Contest. Bob is an advisor to the Northern California DX Foundation, for whom he designed and fabricated their new beacon system. He is a member of the Northern California Contest Club and the Northern California DX Club.



### **Ralph Fedor, MD, KØIR**

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Ralph is a medical doctor, with specialty in diagnostic radiology. He was first licensed in 1961 as WAØABU; he has held KØIR since 1976. He has been involved in many aspects of amateur radio, but has always gravitated back to DXing and contesting, especially on CW. He is active on all bands from 1.8 to 1296 MHz. He holds most of the popular awards relating to DXing. Ralph is a member of the St. Cloud Radio Club, Northern Minnesota DX Association, Northern California DX Foundation, and the International DX Association. He is an honorary member Twin City DX Association. Ralph was a member of the 1992 VP8SSI DXpedition team. After the SSI DXpedition, he was asked to organize and lead the DXpedition to Peter I. That expedition was widely celebrated as one of the most successful of all time. He was the prime organizer for the 1995 attempt on Heard Island, and remains involved in guiding the 1997 expedition. He and his wife Sandy and their four children enjoy their country acreage, where Sandy cultivates flowers and he grows antennas.



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Alberto Hernanedz, K3VN (ex WA3YVN) Al is an electronics engineer with more than 30 technical publications and two patents in electronic interference research and radio communications. He has published several expedition articles and contributed a chapter to the book *Antarctica: A New Look*. As a member of the U.S. Antarctic Research Program, Al participated in over 15 research expeditions and has the distinction of having crossed the "terrible" Drake Passage, off Cape Horn, 18 times as a crew member aboard the National Science Foundation Research Vessel HERO. He is a licensed Radio Officer in the U.S. Merchant Marine and is a Master Scuba diver and photographer. He is an active expeditioner and recently organized the expedition to South Georgia Island, VP8SGP and co-organized the VP8SSI expedition to South Sandwich Island. During three years of active exploration in Antarctica he activated Deception Island LU1ZC in the South Shetlands and operated from Palmer station KC4USP, South Orkney Islands LU1/KC4AAB, King George Island 4K1/KC4AAB and the R/V HERO KC4AAB/MM. He is a Fellow in the Explorers Club and is a member of the American Polar Society, Florida Academy of Sciences, Sigma XI - The Scientific Research Society, Radio Society of Great Britain and the American Radio Relay League. Additional licenses and/or operations: VP8CBC, 3YØC, CE8/WA3YVN, LU1AKO, C6AHI, XX9TWA, VR2/WA3YVN, ZD8/WA3YVN and most recently BT1DX from China.



**Glenn Johnson, MD, WØGJ (exWAØPUJ)**

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Glenn has been DXing and contesting since the age of 15 in 1965. Glenn is currently licensed as VO2GJ, VP2EZ, and ZF2RT. He has recently operated on the CQWW multiop teams of VO2WL and V59T and on the ARRL multiop teams of VP5H and ZF2RX. His wife Vivien is KL7YL (also ZF2RU). He and Vivien home-school their 4 children. Melissa, 12, NØYPC & ZF2WL, was first licensed at age 8. Mark, 10, KBØNLC, was first licensed at age 7. Paul, 8, and Carrie, 6, have both learned the code and are studying for their licenses. The family contests as The Johnson Joules with their "club" call, KBØTDC. They live on the continental (Laurentian) divide in the north woods of Minnesota. Glenn operates a PacketCluster node in the Northern Minnesota DX Association. In real life, Glenn is an orthopedic surgeon specializing in total joint replacement and fracture care. He also flies a floatplane in the summer when the bands are dead or he's not putting up big towers and antennas.





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Wes is a Manager with Rockwell International and is responsible for the Engineering Computing, Simulation, CAD tools and Laboratories at the Duluth, Georgia site. He has been an active ham since 1954 and has operated from VK4, J28, KX6 and XR0. He provided a cover story to QST in April, 1972, and was the Great Lakes Division Convention Chairman in 1975. He and his wife, Bev, have two children (Lisa and Joe) and live near Atlanta. They enjoy camping, bicycling, hiking, square dancing, and doting on their grandchildren (Mariah and Sarah)!!





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K9AJ, Mike McGirr, was first licensed in 1963 at the age of 16. Mike grew up in New Jersey, and lived on the east coast until residency training at the Univ of Chicago brought him to the midwest. Mike is Board Certified in Emergency Medicine & an examiner for the oral exams given by the American Board of Emergency Medicine. Mike is an avid DX'er & prefers CW-especially on low bands & WARC. K9AJ is on the top of the mixed & CW DXCC honor rolls & was the first midwest station to work 5 band WAZ. Past operations include: 4S7AJG, 8Q7AJ, 8Q7BQ, HC8X, XF4DX, T32BJ, K9AJ/KH5K, AH1A, T30AJ & J3J. Mike's XYL (Sue) is KA9RHK who helps run the K9AJ PacketCluster node. Mike & Sue have 4 children ranging in age from 12 to 19.



**Arno Metzler, OE9AMJ**

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Arno is 40. Arno has been active for 20 years as a ham, in CW and SSB. He has logged more than 300 countries. He enjoys amateur radio direction finding, for which he was several times the Austrian champion. He is the organizer of the annual all-OE 40/80m contest, which he won first place two times and made two times the third place. He is QRV 23 cm + 13 cm with his 5 ft. dish. Arno was trained as an electrician, but he's been a self-employed businessman for 20 years. He trades with bubble gum, small toys and costume jewelery. He and his wife Helga have 3 children.



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Michael was first licensed in 1966 at age 11, and has held N6MZ since 1977. He is an avid CW DXer and contester, but also enjoys SSB and the digital modes. Michael is a builder and experimenter, has restored many tube-type "boatanchors," and enjoys modifying commercial transceivers; he published a QST article as a result of one of his modifications to the ICOM IC-765. Michael also enjoys experimenting with antennas, and has field-tested several new antennas for Telex/Hy-Gain. He is a life member of the ARRL, a DXCC member, and a member of the Western Washington DX Club. Michael received his BS degree in electrical engineering from Ohio State, where he was very fortunate to work with and study under Dr. John Kraus, W8JK. When not chasing new ones, he loves sailing, scuba diving, bicycling, cross-country skiing, and opera.



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David has been involved in radio and electronics since the age of 12. He is the holder of VK2JDM (ex VK2TQM) (LAOCP), currently upgrading to full call. Interests include VHF, UHF voice, Packet, SSTV and HF operation. He is involved with the Parramatta Amateur Radio Club, where he has helped with the construction, installation and maintenance of the clubs 2M repeater, planning and involvement in the clubs DX-perdition to the Barrington Tops area in NSW Australia, and the Scout Association with J.O.T.A..

He served 6 years in the Department of Defense Army Reserve, attached to the Signals Section of an Officer Training Regiment, where he was directly involved in the establishment, maintenance and running of many operational and strategic communications systems. He is actively involved in the State Emergency Service, holding several positions, including: Rescue Team Member and Communications Officer, in which capacity he was responsible for all communications requirements, including HF, VHF, UHF plus phone/fax services and other communications methods. He drafted the "Radio Operators Handbook," used as the "standard" training manual for all SES units state wide by the State Government. As Local Controller, his responsibilities include command and control of operational resources, plus the development of Standard Operating Procedures, including disaster plans, command and control of resources in response to a disaster, disaster planning and preparation and training and education of both members of the service plus the public. He was directly involved with the 1986 Major Flood and storms in Sydney, Newcastle Earthquake 1992 Kurringai Tornado, the 1994 Sydney/NSW Bush Fires plus many other smaller operations.

He has the following skills and certifications: First Aid, Flood Boat Operator, Instructional Techniques Certified, Basic Rescue Certified, Advanced Rescue, and Communications. His skills include, knots and lashings, abseiling and vertical rope techniques for rescue and recovery from heights or depths, rescue methods and principals, hydraulics, lifting and hauling methods, cutting, lighting and power generation, pumping and flood management.

David is currently employed by GEC Electronicsa (a supplier of electronic components to original equipment manufactures, engineering and design services, sales, marketing and servicing of test and measurement equipment predominately RF related) as Operations and Quality Assurance Manager. His responsibilities encompass the MIS system that covers both Australia and New Zealand, internet email and management of our WWW service (URL is <http://www.gec.com.au>), all warehousing distribution activities, all purchasing and logistics, staff training and development, corporate strategic planning, strategic alliancing/customer partnerships, business development, QA certification and TQM development.



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Carlos is a biochemist with Chiron Corporation, with more than 50 technical publications and 2 U.S. patents. He was born and raised in Chile, and has family and professional connections there. For a few years lived in Puerto Rico, where he was licensed with his present Extra Class. He also holds an Extra Class license in Chile, being CE3AQI. After moving to California, he became active in the Northern California Contest Club (NCCC). He was one of the organizers (with KK6EK) of the 1995 Easter Island/Salas y Gómez expedition. He personally led the expedition to SyG (XRØZ), resulting in a new IOTA (SA-083).



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Arie will be responsible for the commercial satellite telephone and fax links. Licensed since 1983, Arie is a satellite and VHF freak who recently picked up RTTY. He is a very precise and systematic op who will never miss a sat opening while on expedition. He run sat/6 m on the FOØCI ('92) and AH1A ('93) expeditions. He was active as T3ØDUU, and run sat and rtty as 7Q7AN this year. Arie operated the Morokulien HAM-station (a fictitious country situated right on the border between LA and SM) as SJ9WL/LG5LG 3 times, mainly on VHF and 6 meters. On Heard Island he will do satellite and part of the RTTY operation. Arie is an economist, who works as a production manager in a fruit and nuts plant. While preparing for this trip, Arie helped with the sponsoring quest and the search for a flexible link from the island to Internet.



### **Ghis Penny, ON5NT**

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Ghis was born Dec. 10, 1947. He is married, with two daughters. He was licensed in 1966, and started DX-ing in 1973. He is on the Honor Roll #1 in CW, Phone, and Mixed. Operates CW and SB on all 9 HF modes, and is a great fan of the lowbands. His scores are: 160 m, 219; 80 m, 297; 40 m, 324; total DXCC score 2714. He holds 5BDXCC, 5BWAS, and 5BWAZ. He needs only 1 more to complete WAZ on 160.

Ghis went on the DXpedition to Benin as TYA11 in 1981, and to Burundi as 9U5JB in 1985, both as a guest-operator. He has operated from AP, CE, CX, LU, VU, YU, 4U11TU, 4U1VIC, and 7X. Other calls he has operated with are: XX9TNT, ON5NT/BV, /CT, /HBØ, /IT84, /LX, /VR2, /5N,Ø, /6W1, and EA/ON5NT, F/,GM/, LA/, OE/, OZ/. Back home he has used the following calls: ON50/5NT, OO5NT, OR5NT, OS5NT, OT5NT, and ON9CDX.

Ghis also works the IOTA program. He has 825+ confirmed. He activated EU-038 as ON5NT/PA, EU-146 twice as PA/ON5N, and EU-096 as OH1/ON5NT. He was a member of the first DXpedition to "Les Sept Isles" EU-107 as FV8NDX and operated as FV9NDX (single op) from EU-074, EU-105, and again EU-107.

He is also QSL manager for 9Q5TT, D2TT, D3T, 4U9Q, 7Q7XT, 5X1T, all calls belonging to Peter ON6TT, and for 9X/ON4WW, 9X1A, and 9X4WW (all recent operations). He also took care of N4HX's QSLs when he was QRV as N4HX/TT8, TYA11, and 9U5JB between 1979 and 1986.

Ghis has a technical background in electronics, but ended up as sales manager in consumer telecom equipment. He enjoys building peripheral equipment for his station, and loves to play around with beverage antennas in the middle of winter and in extremely wet fields!



**Willy Ruesch, PhD, HB9AHL**

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Licensed since the age of 17, Willy is a CW and phone op, DXer (Top of Honor Roll, 5BWAZ, 5BWAS/5BDXCC,...) and an experienced expeditioner. He was previously active as SV1DB/A (Athos'73), TI9FAG ('75), FOØXC (Clipperton'78), 3Y5X (Bouvet'89-90), NØAFW/KH5 and N9NS/KH5K ('93), 3YØPI ('94), and operated as VP8BZL (Falklands'94). Willy is a doctor of science technology and works as a forest engineer for the Swiss government.





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I'm 36 years old. I was first licenced in 1988 as EB8BTK, and worked digital and voice satellite. When upgraded to EA8AFJ, I spent most of my radio time to DXing and Contesting, still leaving a little time to digital modes (RTTY, packet, pactor...). I was born in Belgium where I studied until the end of my high school, and than move in 1978 to the Canary Islands (Tenerife), where I have been an importer, wholesaler and retailer of Chinese handycraft products. Since August of this year I have been in Florence (Italy). I'm still studying what kind of business to do: probably some internet related business. Married since 1989 with Cinzia, I have 2 children : Matias(6) and Alicia(3).



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Bob is a physicist, with more than 80 technical publications, 2 patents, and numerous popular articles. He is the Founder and Expedition Leader of Cordell Expeditions, a nonprofit research group begun in 1977. The group is responsible for the creation of the Cordell Bank National Marine Sanctuary, which was designated entirely on the basis of results from Cordell Expeditions.

Bob was a participant in the 1994 expedition to Peter I Island, Antarctica, 3YØPI, where in addition to radio operations, he carried out a program of sampling and chemical analysis of the environment. He was the organizer and co-Expedition Leader of the 1995 expedition to Easter Island/Salas y Gómez, XRØY/Z, which included 32 participants for 3 weeks. Licensed since 1962, he now holds an Extra Class license. He is active in Islands on the Air (IOTA), having activated five New Ones: Farallons, NA-178; Guadalupe, NA-179; Roqueta, NA-183; Northern California Group, NA-184; and Central California Group, NA-187. Other calls he has held are XF1/KK6EK, VP8CPK, 4K1/KK6EK, CEØ/KK6EK, VK6EKK, and VKØEK.

Bob is the author of five books derived from his expeditions: *Ecology of an Underwater Island*; *Edward Cordell and the Discovery of Cordell Bank*; *Rocas Alijos*; *3YØPI Peter I Island 1994 DXpedition*; *DX-Aku: Messages from the 1995 Easter Island DXpedition*. He is a Fellow of the Explorers Club and current Chairman of its Northern California Chapter. He is honored by *Schmieder Bank* (a rocky bank in the eastern Pacific), *Codium schmiederi* (an alga), *Erylus schmiederi* (a sponge), *Pharia pyramidata schmiederi* (a starfish), and *Megalomphalus schmiederi*, (a gastropod), and *Codium schmiederi* (an alga). He has been listed in almost every Who's Who in the world, including Who's Who in the World. He is the owner and operator of a research vessel, the Cordell Explorer.

Bob's professional work has been in atomic physics, spectroscopy, ion sources, tritium, combustion physics and chemistry, X-ray lasers, laser spark spectroscopy, and plasma physics. Most recently, his interests have turned to collective dynamics, large-scale distributed computing, artificial life, and ecosystem modeling.



**HB9AFI Kurt Wetter**

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Kurt, age 56, married to Luciana. no children.

Ham since 1964. Enjoying CW and SSB DX-ing and contesting.

Obtained DXCC-Honorroll, IOTA-Honorroll, USA-CA all-counties-

trophy. Been active as 3A0HM, HB0, C30EUA, S79FI, 4U1ITU, VK3FBL/7 (OC-195) and VK3FBL/p (OC-196).  
Member of HB9MM club where he won several times H26 national contest. Other

interests are radio direction finding, hiking, cross country skiing and travelling. Kurt is professionally an interior-decorator and carpet-layer.

## Heard Island Expedition 1997 (Scoping Document)



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## BIBLIOGRAPHY

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### General

Keage, Peter L. 1981. The Conservation Status of Heard Island and the McDonald Islands. Environmental Studies Occasional Paper 13. University of Tasmania.

Headland, R. 1984. *The Island of South Georgia*. Cambridge University Press.

Heard Island Wilderness Reserve Management Plan, Australian Antarctic Division, Sept. 1995.

Munk, W and Baggeror, A. 1994. The Heard Island papers: A contribution to global acoustics. J. Acoust. Soc. Amer. **96**:2327-2329.

Smith, J. B. 1983. The Official Report of an Amateur Radio Scientific Study and Mountaineering Expedition Heard Island 1983. Report to the Department of Science and Technology, Canberra. HIDXA, P. O. Box. 90, Norfolk Island, S. Pacific 2899.

Southwood, T R E. 1978. *Ecological Methods, with Particular Reference to the Study of Insect Populations*. Chapman and Hall, London.

Thornton, M., Ed. 1983. *Heard Island Expedition 1983*. Spirit of Adventure Pty. Ltd. ISBN 0 9592568 0 6.

### Radio operations

Jenkins-Smith, K. 1985. *Heard Island Odyssey*. HIDI-Y Enterprises, Norfolk Island.

Pall, S. 1995. How's DX. Heard Island VKØ. Amateur Radio (Australia), **63**(8):32-33.

Pall, S. 1995. How's DX. Heard Island VKØ. Amateur Radio (Australia), **63**(10):35.

### Geology

Brooks, J A. 1957. Magnetic observations at Heard Island. *ANARE Interim Reports* 34.

Clarke, I. 1979. Petrogenesis of basic and ultrabasic lavas on Heard Island. *J. Geol. Soc. Aust.* **26**:272.

Hilton, D R, J Barling, and G E Wheeler. 1995. Helium isotope evidence for shallow-level contamination of ocean island magmas at Heard Island. *Nature* **373**:330.

## **Meteorology**

Australian Bureau of Meteorology. 1957. Meteorology: Mawson, Heard, and Macquarie Islands 1954. ANARE Scientific Reports 38.

## **Plants**

Bergstrom, D M and R D Seppelt. 1988. The moss flora of Heard Island [Indian Ocean]: Revised checklist, annotations and phytogeographical considerations. *Lindbergia* **14**(3):184-190.

Hertel, H. 1989. New records of lecideoid lichens from the Southern Hemisphere. *Mitteilungen Der Botanischen Staatssammlung Muenchen* **28**:211-238.

Hertel, H. Noteworthy finds of southern hemispheric saxicolous species of the collective genus Lecidea. *Mitteilungen Der Botanischen Staatssammlung Muenchen* **23**:321-340.

Orchard, A E. 1989. Azorella Lamarck (Apiaceae) on Heard and Macquarie Islands, with description of Azorella macquariensis, new species. *Muelleria* **7**(1):15-20.

Seppelt, R D, et al. 1986. Contrasts in vegetation pattern Heard Island and Macquarie Island, Australia. p.171-176 in: Trehen, P. (Ed.), Cnfra (Comite National Francais Des Recherches Antarctiques), No. 58, (=French National Committee on Antarctic Research, No. 58), Second Colloquium on Subantarctic Terrestrial Ecosystems: Communities and Organisms: Selective Pressures. Paimpont, France, September 8-11. 261p. Cnfra: Paris, France. Illus. Maps. Paper.

Whinam, J. 1989. Structure and floristic composition of the Heard Island [South Indian Ocean] "pool complex" community. *Polar Biology* **9**(8):499-504.

## **Microbiology**

Bunt, J S and A Rovira. 1955. Microbial studies of some subantarctic soils. *J. Soil Science* **6**(1):119-128.

## **Nematodes**

Greenslade, P. 1989. Checklist of free-living marine nematodes from Australia, Macquarie Island and Heard Island. *Records of the South Australian Museum (Adelaide)* **23**(1):7-20.

## **Insects**

Brown, K G. 1957. The insects of Heard Island. *ANARE Research Reports* 73.

Chown, S L, et al. 1990. Description of the larva of *Christensenia antarctica* Brinck with implications for the phylogeny of Ectemnorhiniini (Coleoptera: Curculionidae). *Coleopterists Bulletin* **44**(3):255-264.

Dreux, P, et al. 1988. The genus *Ectemnorhinus*. G. R. Waterhouse 1853 (Coleoptera, Curculionidae). *Nouvelle Revue D'entomologie* **5**(4):375-382.

Green, K and L A Mound. 1994. An extension to the insect fauna of Heard Island. *Polar Record* **30**(173):131-134.

Voissin, J-F, et al. 1987. The Coleoptera populations of the sub-Antarctic Islands of the Indian Ocean. *Bulletin de la Societe Zoologique De France* **112**(3-4):455-470.

### **Freshwater Invertebrates**

Laybourn-Parry, J, et al. 1992. *Daphniopsis studei* (Crustacea: Cladocera) in lakes of the Vestfold Hills, Antarctica. *Polar Biology* **11**(8):631-635.

Dartnell, H J G. 1995. The Rotifers of Heard Island: Preliminary survey, with notes on other freshwater groups. *Papers and Proceedings of the Royal Society of Tasmania*. Vol. 129.

### **Fish**

Duhamel, G. 1992. Description of new species of *Careproctus* and *Paraliparis* from the Southern Ocean and new information on these genera and the genus *Edentoliparis* (Cyclopteridae, Liparinae). *Cybium* **16**(3):183-207.

### **Birds**

Gales, R, et al. (?). Recovery of the king penguin, *Aptenodytes patagonicus*, population on Heard Island [Tasmania, Australia]. *Australian Wildlife Research* **15**(5):579-585.

Green, K, et al. 1990. Diet of the Heard Island [Southern Ocean] cormorant *Phalacrocorax atriceps nivalis*. *Antarctic Science* **2**(2):139-142.

Jones, H I. 1988. Notes on parasites in penguins (Spheniscidae) and petrels (Procellariidae) in the Antarctic and Sub-Antarctic. *Journal of Wildlife Diseases* **24**(1):166-167.

Kirkwood, R J, et al. 1992. The status of the black-browed albatross *Diomedea melanophrys* at Heard Island. *Emu* **92**(2):111-114.

Klages, N T W, et al. 1989. Dietary segregation of macaroni and rockhopper penguins at Heard Island [Indian Ocean]. *Australian Wildlife Research* **16**(6):599-604.

Klages, N T W, et al. 1990. The diets of king and gentoo penguins at Heard Island [south Indian Ocean]. *Australian Wildlife Research* **17**(1):53-60.

Speedie, C. 1992. An erect-crested penguin in the southern Indian Ocean. *Notornis* **39**(1):58-60.

## **Mammals**

Bowles, A E, Smultea, M, Wursig, B, DeMaster, D P, and Palka, D. 1994. Relative abundance and behavior of marine mammals exposed to transmissions from the Heard Island Feasibility Test. *J. Acoust. Soc. Amer.* **96**:2469-2484.

Brownell, R J Jr, et al. 1989. A porpoise *Australophocaena dioptrica* previously identified as *Phocoena spinipinnis* from Heard Island southern Indian Ocean. *Marine Mammal Science* **5**(2):193-195.

Daneri, G A, et al. 1993. Fish prey of Antarctic fur seals, *Arctocephalus gazella*, during the summer-autumn period at Laurie Island, South Orkney Islands. *Polar Biology* **13**(5):287-289.

Gales, N J, et al. 1989. Genetic relatedness of two populations of the southern elephant seal, *Mirounga leonina*. *Marine Mammal Science* **5**(1):57-67.

Goldsworthy, S D, et al. 1989. Counts of the Antarctic fur seal *Arctocephalus gazella* and location of colonies at Heard Island in the 1987-1988 summer. *ANARE (Australian National Antarctic Research Expeditions) Research Notes* 1989(72):I-III, 1-25.

Goldsworthy, S D, et al. 1989. Subantarctic fur seals *Arctocephalus tropicalis* new record at Heard Island Australia. *Polar Biology* **9**(5):337-339.

Green, K, et al. 1989. Interspecific and intraspecific differences in the diets of fur seals, *Arctocephalus* spp. (Pinnipedia: Otariidae), at Macquarie Island [Australia]. *Australian Mammalogy* **13**(1-2):193-200. Also: 1989. *Australian Wildlife Research* **16**(6):599-604.

Green, K, et al. 1989. The diet of Antarctic fur seals *Arctocephalus gazella* (Peters) during the breeding season at Heard Island [Indian Ocean]. *Antarctic Science* **1**(4):317-324.

Green, K, et al. 1991. The diet of Antarctic fur seals during the late autumn and early winter around Heard Island. *Antarctic Science* **3**(4):359-362.

Green, K, et al. 1993. Comparison of the stomach contents of southern elephant seals, *Mirounga leonina*, at Macquarie and Heard Islands. *Marine Mammal Science* **9**(1):10-22.

Guinet, C, et al. 1992. Population changes, movements of southern elephant seals on Crozet and Kerguelen Archipelagos in the last decades. *Polar Biology* **12**(3-4):349-356.

Shaughnessy, P D, et al. 1988. Fur seals at Heard Island Indian Ocean: Recovery from past exploitation. pp. 71-78 in: Augee, M. L. (Ed.). *Marine Mammals of Australasia: Field Biology*

and Captive Management. Symposium On Marine Mammals, Sydney, New South Wales, Australia, August 1987. Vii+140p. Royal Zoological Society Of New South Wales: New South Wales, Australia. Illus. Maps. Paper.

Shaughnessy, P D, et al. 1990. Population size and breeding season of the antarctic fur seal *Arctocephalus gazella* at Heard Island [Indian Ocean] 1987/88. *Marine Mammal Science* **6**(4):292-304.

Shaughnessy, P D. 1992. New mammals recognised for Australia: Antarctic and subAntarctic fur seals *Arctocephalus* species. *Australian Mammalogy* **15**:77-80.

Slip, D J, et al. 1994. Allozyme variation in the leopard seal, *Hydrurga leptonyx*. *Australian Mammalogy* **17**:1-5.

Woehler, E J, et al. 1992. Consumption of marine resources by seabirds and seals at Heard Island and the Mcdonald Islands. *Polar Biology* **12**(6-7):659-665.