

Lord Howe Island

(New South Wales, Australia)



Scoping Document for Expedition

Rev 1.17

July 19th - August 1st, 2024

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Abstract

The goal is to reach Lord Howe Island and operate for a couple of weeks on as many HF bands to give the amateur radio community an “activation” of a semi-rare entity. This Plan is the outline and details which cover the objectives, methods and tasks to perform. This document is the governing document for how and what this DX’pedition is for Lord Howe Island.

Acknowledgements

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Web address for DX'pedition will be posted soon.

In mean time, this document will be regularly and frequently updated. Please find this document at the following address:

[Lord Howe Scope Document](#)

A summary web page template is under development and can be found at:

[VK9L/W7BRS Expedition Page](#)

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1 How to Read this Document

This document is a draft plan for an DX'pedition happening in July of this year. There are many instances in this document of the term TBD and TBR.

- TBD is To be Determined. It may not apply or it may apply.
- TBR is To be Reviewed. It will apply, but the details are uncertain.

TBD could be removed. TBR will remain until the uncertainty is resolved.

Hypotheticals:

1. *"The operation will use FT-4, TBD."* Meaning: we may or we may not use FT-4. If we decide not to, then that hypothetical statement will be removed.
2. *"The operation will use FT-8, FT-4, TBR."* Meaning: we may or we may not use FT-4 or FT-8, but the list of what digital modes we do use will be reviewed until that uncertainty is removed.
3. *"The operation will work on 80-10 meters, TBR."* Meaning: we may not use all of those bands, but we are using bands and the list will be reviewed until that uncertainty is removed.

Thanks for your understanding.

2 Preliminaries

The geological setting for Lord Howe Island is 580 km off the coast of Australia upon the western edge of the Lord Howe Rise.

The Rise is a continental ribbon, rifted from eastern Australia during the Crataceous to Paleogene and forms a submerged portion of the microcontinent Zealandia.^[1]

According to geological studies what remains today is a remnant of an eroded shield volcano that erupted between 7 and 4 million years ago.

The age of the island and the seamounts in the region are less in the south which suggests that the a northward trajectory of the Australian plate over a stationary mantle plume.

A set of reference maps that detail the interesting geology are included in the appendix.

3 Scope



Figure 1: Flag of Lord Howe Island

The DX'pedition to Lord Howe Island is a solo trip by the author, Jeff Wandling, W7BRS. The basic information about the trip is summarized in the list below.

- **Call:** VK9L/W7BRS
- **What:** A Fly-In DX'pedition to Lord Howe Island
- **When:** QRV July 20 through August 2nd TBR
- **Where:** QTH Beachcomber Lodge, Lord Howe Island, Australia
- **IOTA:** OC-004
- **Continent designation:** Oceania
- **ITU:** 60, **CQ:** 30, **DXCC:** #147
- **Bands:** 40m through 10m, CW, FT8 and SSB TBR
- **QSL:** ClubLog OQRS and LotW (pending) ...
- **Operators:** Jeff Wandling, W7BRS / ...
 - ClubLog Most-Wanted¹: #63
 - Will be QRV during RSGB IOTA CW contest.
 - QSO count goal is to reach average 500-600 QSO per 24-hour day, TBR.

¹As of April 2024

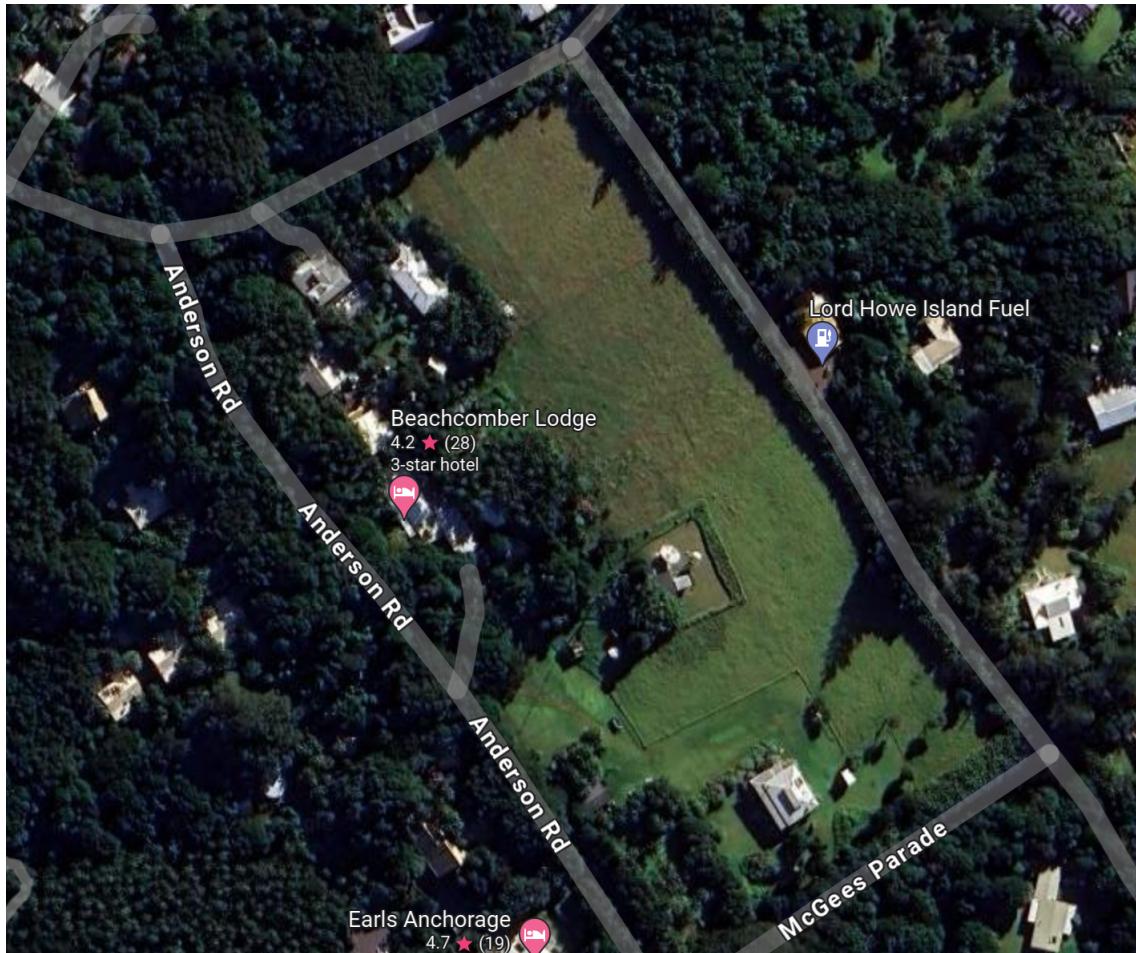


Figure 2: The site terrain of the QTH is located on a farm on the northern leg of the island. The Plan is to go to LHI and operate HF for approximately two weeks from the site Beachcomber Lodge located on the northern tip of the island.

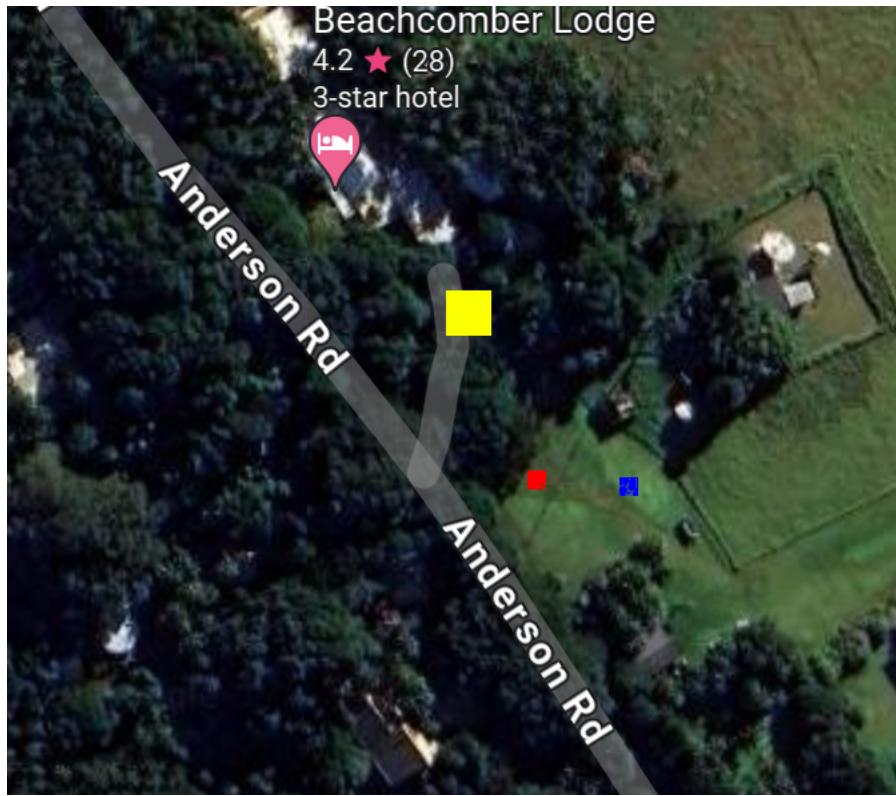


Figure 3: The yellow box represents the location planned for the shack. The red and blue boxes represent the approximate location of the vertical antennas deployed – DX Commander and SteppIR CrankIR vertical

3.1 Important Checklist

✓	Secured Immigration Visa for Australia
✓	Airline tickets purchased
✓	Reservations made for site lodging
✗	Final antenna inventory
✗	Public Announcement

Figure 4: Most pressing tasks to resolve soon.

3.2 Where Is Lord Howe?

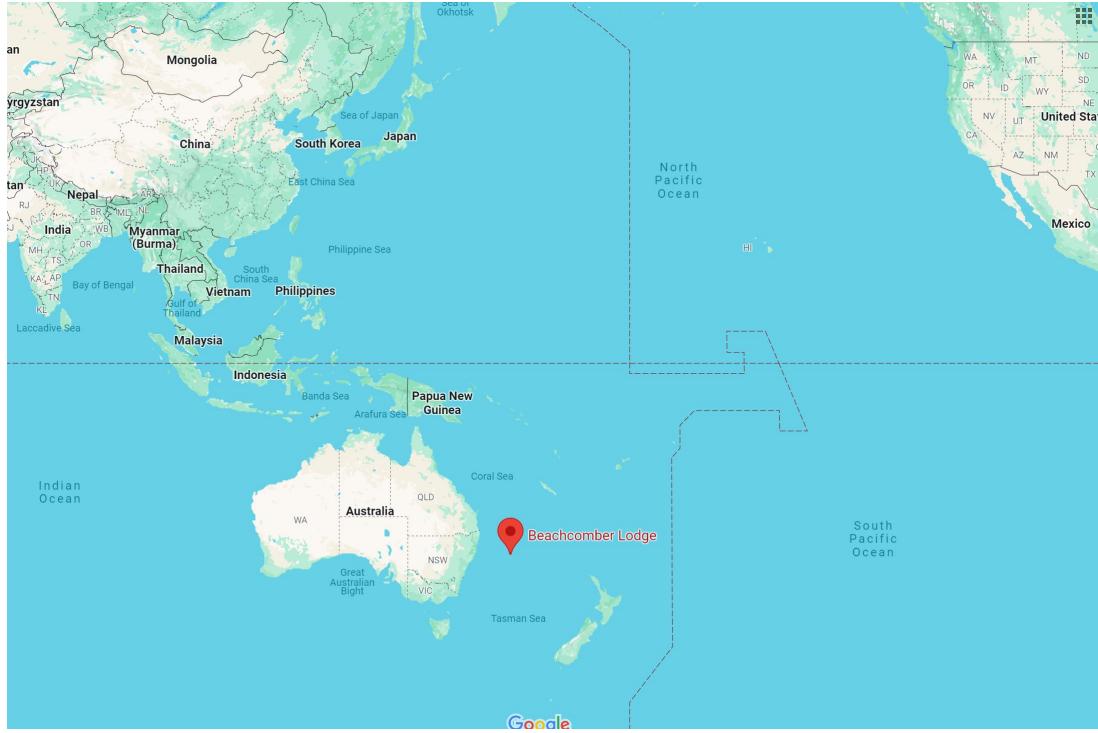


Figure 5: Proximity of LHI with Australia and the North American, South American and Asian continents.

LHI compares with these other sought after entities, for example:

Rank	Prefix	Entity
63	VK9L	Lord Howe Island
66	CY0	Sable Island
70	7O	Yemen
93	HV	Vatican City
139	YA	Afghanistan
174	S7	Seychelles Islands
198	CE9	Antarctica

Table 1: Comparison of VK9L with other sampled DX entities for comparison.

4 Geography

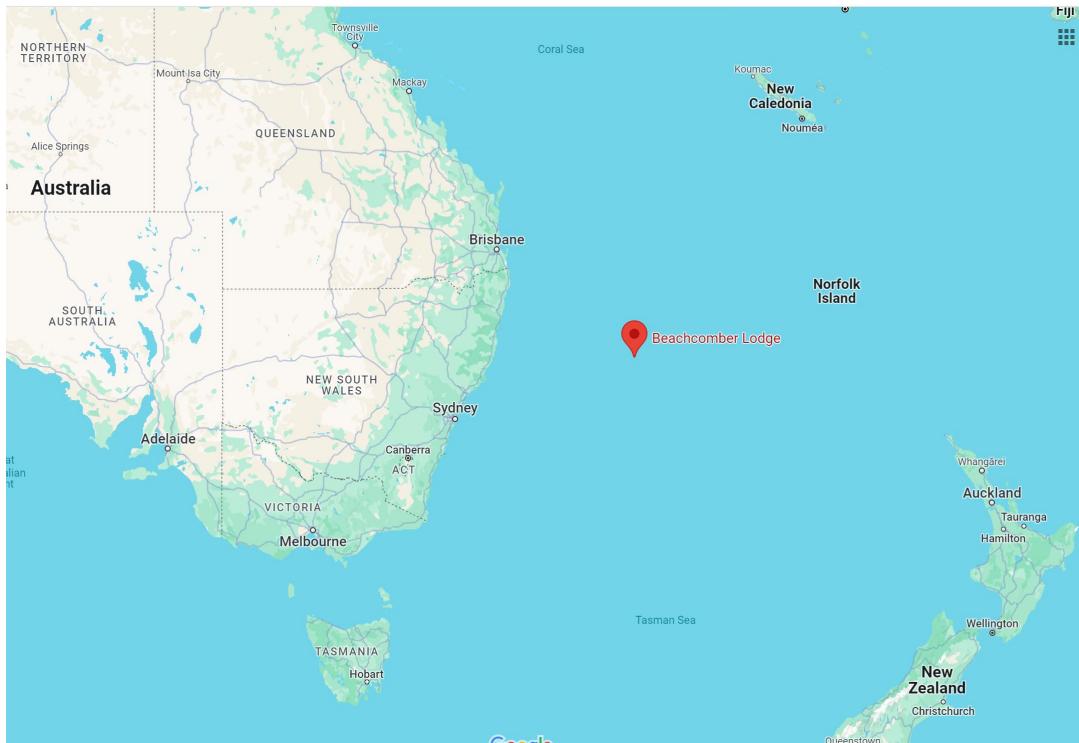


Figure 6: Location of Lord Howe relative to Australia and surrounding islands in Oceania.

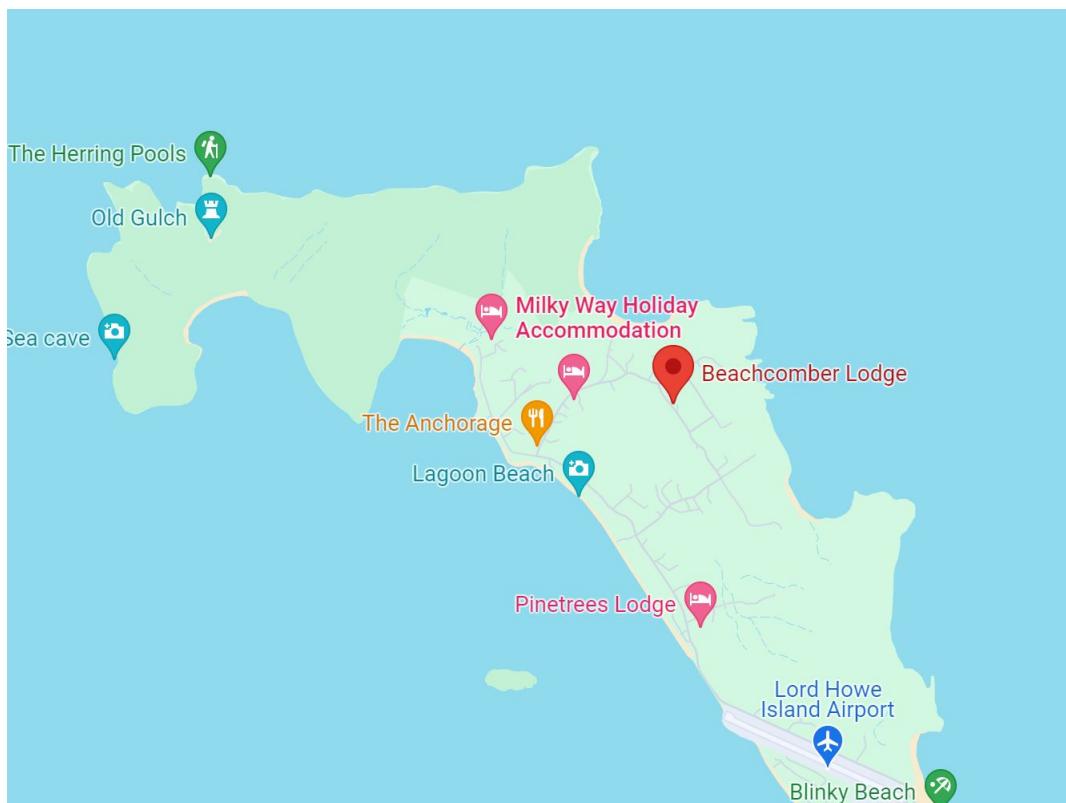


Figure 7: Location proposed on LHI – The Beachcomber Lodge.

The Azimuthal map (attached) will show that amateurs located in North America, East Asia, and Europe will be reachable with an array of antenna that are pointed almost due North from the island. Contacts to South America and Africa will be reachable with a different orientation of the antennas.

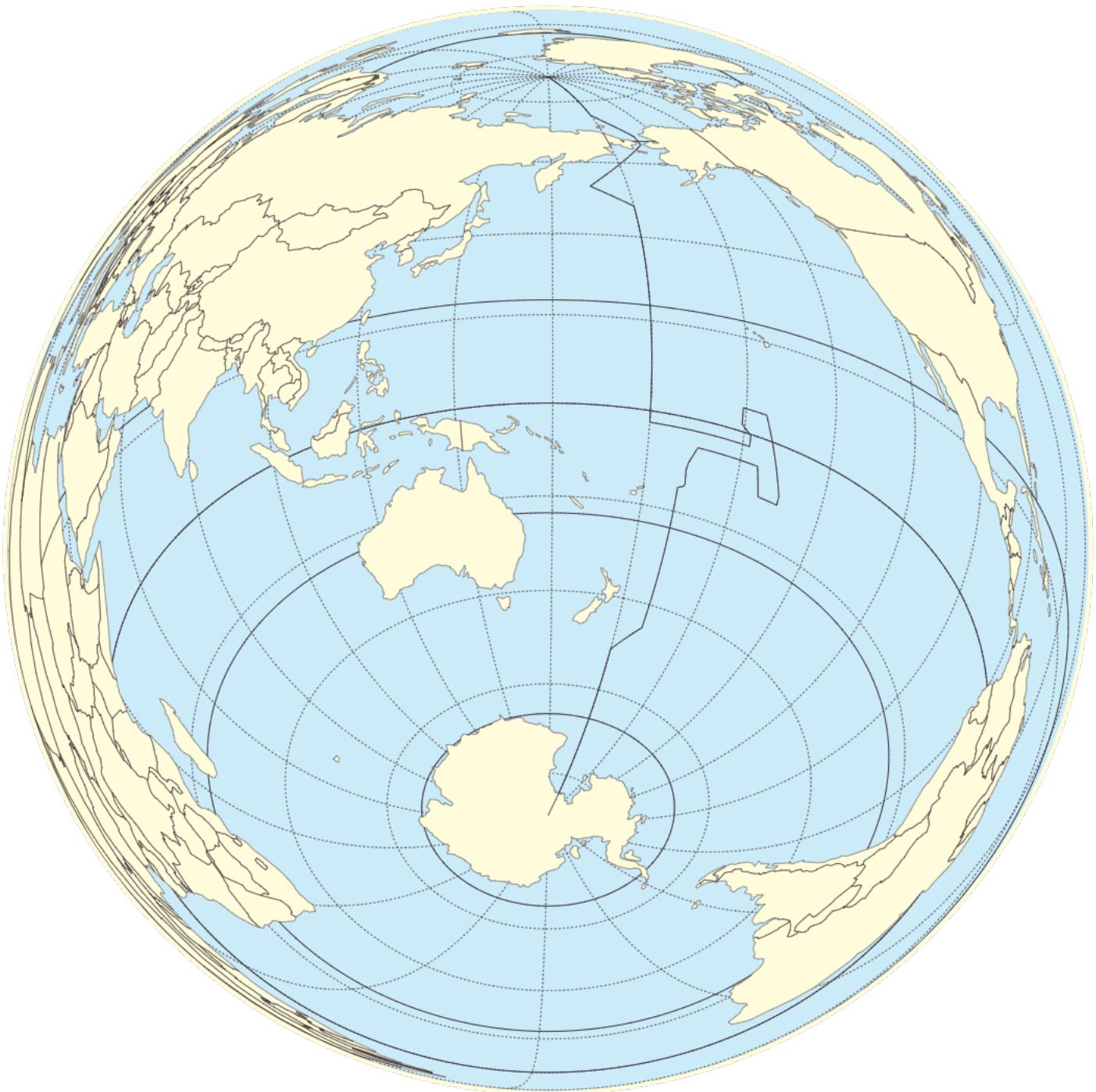


Figure 8: Approximate Azimuthal headings for LHI for the main target operations of NA, JA (Asia) and EU

5 Weather

It is going to be cold on LHI. For the standard weather the author is used to in the Seattle area, the weather is actually on par with a typical early spring or early fall day. Mid 60's (F) and frequent rain. Not a bad weather event for the Seattle area, but it will be chilled weather nonetheless.

Aside from the dynamic effect on the antenna tuning, the weather will require a set of warm clothing and rain-gear. Winds are expected, so rigging to keep the antennas up are required.

Climate data for Lord Howe Island Airport 1991–2020 averages, 1988–present extremes													[hide]
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	30.0 (86.0)	31.3 (88.3)	28.2 (82.8)	27.4 (81.3)	25.8 (78.4)	23.9 (75.0)	23.2 (73.8)	23.4 (74.1)	23.6 (74.5)	25.4 (77.7)	28.0 (82.4)	28.4 (83.1)	31.3 (88.3)
Mean daily maximum °C (°F)	25.5 (77.9)	25.8 (78.4)	25.0 (77.0)	23.4 (74.1)	21.6 (70.9)	19.9 (67.8)	19.1 (66.4)	19.1 (66.4)	20.1 (68.2)	21.0 (69.8)	22.4 (72.3)	24.1 (75.4)	22.2 (72.0)
Daily mean °C (°F)	23.2 (73.8)	23.5 (74.3)	22.6 (72.7)	20.8 (69.4)	19.0 (66.2)	17.4 (63.3)	16.5 (61.7)	16.4 (61.5)	17.4 (63.3)	18.4 (65.1)	19.7 (67.5)	21.7 (71.1)	19.7 (67.5)
Mean daily minimum °C (°F)	20.8 (69.4)	21.1 (70.0)	20.1 (68.2)	18.1 (64.6)	16.3 (61.3)	14.8 (58.6)	13.9 (57.0)	13.6 (56.5)	14.7 (58.5)	15.7 (60.3)	17.4 (63.3)	19.2 (66.6)	17.1 (62.9)
Record low °C (°F)	13.1 (55.6)	13.7 (56.7)	13.3 (55.9)	11.2 (52.2)	8.7 (47.7)	7.5 (45.5)	6.1 (43.0)	6.4 (43.5)	5.9 (42.6)	7.8 (46.0)	9.2 (48.6)	11.4 (52.5)	5.9 (42.6)
Average precipitation mm (inches)	102.5 (4.04)	107.0 (4.21)	126.8 (4.99)	138.7 (5.46)	153.2 (6.03)	169.4 (6.67)	138.0 (5.43)	104.7 (4.12)	109.5 (4.31)	99.0 (3.90)	110.9 (4.37)	101.1 (3.98)	1,460.9 (57.52)
Average precipitation days (≥ 0.2 mm)	12.6	13.1	15.3	18.3	20.7	21.5	22.7	19.8	16.5	13.7	13.5	12.7	200.4
Average relative humidity (%)	69	66	66	66	66	65	65	64	68	67	67	66	66
Average dew point °C (°F)	18.0 (64.4)	17.8 (64.0)	16.6 (61.9)	14.8 (58.6)	13.2 (55.8)	11.7 (53.1)	10.8 (51.4)	10.5 (50.9)	12.3 (54.1)	13.0 (55.4)	14.8 (58.6)	16.3 (61.3)	14.2 (57.5)

Source 1: Bureau of Meteorology, Lord Howe Island Aero (1991–2020)^[143]

Source 2: Bureau of Meteorology, Lord Howe Island Aero (all years)^[144]

Figure 9: A weather chart showing trends of temperature, rainfall on Lord Howe Island.

The expectation is a colder-than-normal Seattle type weather situation.

Warm clothes, and layers is the recipe to deal with that. It will not be a huge difficulty to overcome.

6 Goals

The goal of the expedition is to activate a semi-rare island during a upward trend in solar cycle 25 when propagation should be at a good level for reaching most amateurs who need LHI.

The lesser goals are

1. Make this an adventure for the DX-pedition. The island is nearly on the far side of the globe from where the organizers reside. It's below the equator from the most populated areas with amateur radio operators (North America, East Asia and Europe).
2. To make as many QSO as time permits. The goal to make good rate for QSO is underlying all of the other goals, but there will be challenges to reach modest numbers given the level of experience with pile-ups and DX'peditions.
3. The rare qualities of the island make it suitable for a DX'pedition. It's semi-rare, but difficult to reach despite the proximity to the mainland of Australia. It's mostly known as a tourist destination however there is unique history to the island. There have not been frequent trips to LHI.
4. Follow the rules of the ARRL DXCC whereby the entity will count for LHI on the bands that are worked.

7 Type of Expedition

These are the qualities of the VK9L expedition:

Status	Attribute
✓	SO2R
✗	M/S
✗	Vacation
✓	Contest
✓	Activation
✗	Heavyweight
✓	Lightweight
✗	5-Star
✓	3-Star
✓	Fly-In
✗	Tent and Generator
✓	Verticals
✗	Beam and Rotators

Table 2: Metrics about this DX'pedition. The bias is on a simple compact DX'pedition. No reliance on pre-shipping or advanced antenna systems. No reliance on generators, tents or other means to survive in harsh climates and conditions.

8 VK9L Leader Roles

This expedition is not initially planned as a multi-op Team, however to lay the ground work for future expeditions, the template for Leader and Planner roles are defined as follows.

The roles contemplated at this stage of planning are as follows:

- Leader and Organizer
 - Jeff Wandling, W7BRS
 - TBR...
- Operator(s)
 - Leader
 - TBD...
- Implementation – Each of these categories themselves is a sub-team (1 to n people).
 - Fund-raising – ...
 - PR and Marketing – ...
 - Food and Lodging – ...
 - Property Master (equipment, location, facilities) – ...
 - Power Systems – ...
 - Antenna design and deployment – ...
 - Station Setup (Transceiver, PA, Peripherals) – ...
 - Software and Networking – ...
 - Media and QSL Content (ClubLog, LiveStream, LoTW, QSL) – ...

- Tear-down and Removal – ...

As shown the list of things to span across the range from organizing to implementation. On a team-effort expedition, those roles would be assigned to specific sub-unit leads.

9 Tasks

The following outline the tasks that must be performed.

9.1 Vision

The Vision ties into the overall goals of the expedition and serves the purpose to develop PR and Marketing materials for the presentation and solicitation of support from the amateur radio community and commercial entities for equipment and monetary support.

In addition, several DX Clubs and Foundations are involved in shaping the vision to some extent by consultation with experts for generating the most compelling and exciting expedition Plan.

The vision of this expedition is to lay the ground work for future expeditions by making an exercise onto a relatively uncommon location for DX. A lot of the issues are present that would be on any other expedition – even those of more severe risk and cost. It is fully understood though that *this* expedition does not share the same amount of danger, cost or consequence as many very complicated expeditions. To name a few – H44WA, TX5S, etc.... Those expeditions had challenges that do not occur on Lord Howe Island (heat is not a factor, abundant animal wildlife intruding on the operating site is also not expected).

Aside from the objective vision of setting out for an adventure to experience the DX'pedition first hand, the author has developed the vision to embrace a few things that have been collected by readings and interviews with other DX'pedition experts.

Here is a quick list of those elements of the vision.

- Nothing is what it seems. Trying to understand the issues that occur on a DX'pedition can not only be learned by reading and talking to those who have done these trips. It's apparent that simply reading and talking about DX'peditions is not enough. The vision therefore is to immerse into the role and activities that are likely to be common for any DX'pedition. **The vision charts a course towards better understanding of real-world situations that could occur on any typical DX'pedition.** Perhaps even the phrase *any typical* is misplaced. Perhaps there is no such thing as a *typical* expedition. Part of the vision then is to gain a better perspective if that is indeed the case.
 - “Do what you know how to do.” Those were the words from the fictional muse in Schmieder’s book. Through a concentrated filter, the book introduces a basis for DX'peditions that is centered around a couple of points that overlap with this author’s own perceptions.
 1. *Do what you know how to do.* Keeping the operation simple, keeping the goals simple and staying within the domain of experience and knowledge that contributes to success. For example, the author has no experience with EME operations. So this expedition will not do EME. We will not work satellites either, even though the author has experimented with it. Experimentation versus dedicated experience is the factor to determine what we do.
 2. Demonstrate that even the new DX'peditioner can be successful. One of the comments I heard when discussing this plan was “No one knows who you are.” The author does not necessarily want to negate that perception. The author is fine not being known, but the impact of not being known means that for the most part – any requests for support, advice or – really anything – are virtually ignored. There is **zero probability** that this author is going to call up *DX Engineering*, or *Elecraft*, or any other source of most serious DX'pedition gear and *ask for anything..*
- It will not happen.

The reason it will not happen is that the author is not known. The author is not a DX'peditioner. So the vision of *this adventure* to LHI is to resolve that question – can a new DX'pedition become known? Should they? Does it help to do DX'peditions on your own (solo) in order to become proficient enough to work with other teams when those other teams do DX'peditions?

Part of the vision of this trip is to find out.

- For the purpose of bringing the world a little closer, make an effort on the island to document very special things about Lord Howe Island. For example the Leader plans to have casual interviews with as many people who reside there – to get a sense of what they like about LHI, how they feel about the special nature of the island, and to gather interesting stories of the remote past. Combined with those interviews also visually document the affair and collect photographs of places, events and people that are seldom seen from the outside world. It is not a vision to attract *more visitors*. The population dynamics of the island are already very delicate and precise with respect to how many people can be supported on the island (resident and tourist).

The best analogy here is the *National Geographic* approach to find something novel and interesting as much as possible – document it, photograph it, record the audio, and bring it back to the public in a compelling way to express the beauty of the natural world and the humanity is on Lord Howe Island.

There is not going to be an effort to push the envelope with respect to technology and develop new mechanisms for handling a DX'pedition. The last several years has seen an explosion of technology rush through the ham shacks across the world. First and foremost – the revolution of digital modes via FT-8 and the hybrids. It is not that digital modes are new. They are not. In fact they are quite old in terms of the history of amateur radio. Phased Shift Keying has been around since the late 30's - 40's.

But, the software (another aspect of amateur radio to address) has made it virtually “point and QSO”. The author is a software engineer by training. From that perspective, using software is a classic case of developing a tool-set to make tasks that used to be complicated much easier and routine. We've seen that be the case for quite some time. A few examples – Log Book of the World. It used to be difficult to maintain a database of QSL for important QSO. Now it's literally embedded into logging software (another benefit) to adjust counts of ATNO.

Digital modes likewise, with the wonderful features of WSJT-X have made it incredibly easier to work a good DX station. Digital modes like FT-8 do not completely level the playing field, but they make the playing field a lot less bumpy and uneven.

So to that extent, the expedition Vision for this LHI activation is not necessarily bound to a set of rules to push the envelope of technology further out. That level of frontier crashing development takes years of planning and truly inspirational thinking by those (and a team) to develop those initiatives. Still, incremental improvements are a hallmark of any good study of Amateur radio and (perhaps with a wink), the author may put something into this trip that exercises some novel approach to DX'peditions.

Some ideas along the lines of

- Reproduce the simplicity of Anti-DQRM techniques in digital modes. A new baseline of WSJT-X has been released that offers some features to establish authenticity to the QSO from a prospective DX station.
- Further lift the curtain to show just how much work needs to go into a DX'pedition – not to discourage, but provide inspiration. To that end, perhaps (since the author likes to write), a series of semi-non-fiction stories will be generated. The amateur radio DX library may be getting a tad dusty in the last 10-15 years.

9.2 Landing Permission

Due to the geopolitical nature of the island, landing on the island is purely a commercial enterprise – just flying to LHI is easy as booking a flight. However, since the island is dominated by tourism in a way, “landing”

permission entails finding a location on the island that would permit radio operations. The impact of the expedition on other guests of the island is probably the most impact and requires the most sensitivity when addressing the goal of finding the ideal location.

The equation with factors that decide optimal location, and thus drive the need for specific “landing” permission are to be covered throughout this Plan. But, at the basic level there appears to be a bias forced by the Island that the location is NOT going to be near salt-water but rather on elevated terrain within a mile of salt-water.

We will cover the impact and benefits of this bias throughout the Plan.

9.3 Licensing

Licensing is through the Australian government.

The reciprocal agreement permits the use of VK9/W7BRS without a separate license.

As long as the requirements are met for the US license holder to operate in Australia on the bands and modes limited to Australian *Advanced* class license (which is effectively equivalent to the *Extra* class) notwithstanding the band restrictions (such as 60m), the prosign call is allowed.

9.4 Team Building

The Team is built by recruiting knowledgeable operators who have distinct skills that overlap. Every operator should have at least operational skill in handling the basic features of the radio equipment (split, filtering) phonetics, timing, economy with QSO patterns, logging software, and patience.

Most of all Team members need to have innate awareness of working pile-ups, and patience to stick to the operational goal for the session (i.e., work NA or work JA’s or work EU as the band and openings dictate).

In addition to building a Team based on skills and performance, another set of factors include

- General Health
- Ability to deal with adversity
- Stamina to work and sleep at odd-hours for days
- Able to cope with a bland diet
- Cheerful under the pressure of typical stress encountered in an unfamiliar place – society, terrain, weather, odd working conditions – time of day, sleep deprivation, adapting to *followership* – sticking to a plan, constructively discussing changes, and when necessary disagree but commit to what the Leader ultimately suggests.

The Team is going to need to focus on key areas

- Basic first-aid
- Fund-raising
- PR and Marketing
- Plan checking and brainstorming
- Communications on site (HT, Repeater on-site)
- Knowledge of and skill at CW
- Knowledge of and skill at SSB
- Knowledge of and skill with FT-8 (hybrids too)

- Antenna deployment, tuning and adjustment
- Station layout, connections, features
- Food and Shelter
- Logistics, scheduling, team morale
- Risk mitigation, safety, security
- Logging, Software, Networking, Integration with Services

The solo operator for this LHI operation has a good background in the following necessities (where checked) on a scale of 1-10:

Satisfied?	Level 1-10	Attribute
✓	10	First-aid and CPR
✗	1	Fund-raising
✗	1	PR and Marketing
✓	8	Plan checking and brainstorming
✓	8	Communications on site (HT, Repeater on-site)
✓	7	CW (25 w.p.m contesting, 18 w.p.m rag-chew)
✓	9	SSB
✓	9	FT-8 (hybrids too)
✓	9	Antenna deployment, tuning and adjustment.
✓	8	Station layout, connections, features
✓	7	Food and Shelter
✓	7	Logistics, scheduling, team morale
✓	6	Risk mitigation, safety, security
✓	9	Logging, Software, Networking, Integration with Services

Table 3: Self evaluation of the author's skills on various roles and abilities on the expedition.

If this was a Team event, each member should have an overlap of two or three (or more) areas of expertise. For example a team member of value would have a combination of three or more features like:

- Plan checking and coordination, Knowledge of SSB, Antenna setup.
- Another Team member may have more experience that covers a broader range like: CW, SSB, Safety and Software, etc ...

9.5 Budget

The two main cost centers for the expedition are

- Flights - approx. \$3,000 (RT) from SEA.
- Lodgings - approx. \$3,400 (10-12 nights) on LHI.
- Capital investment \$3-4,000 (antennas, cables, electronics, rigging, travel containers)

The budget therefore per person is roughly \$7-10,000 if all of the other incidentals are taken into account.

There are capital costs for setup and equipping the expedition. There are consumables and non-recoverable costs (food, flights, lodgings, etc...)

A complete breakdown is not yet established, but the estimate (which will likely increase) is around \$10,000 per person, not including the capital investments.

9.6 Fund-raising

Fund-raising is an action to take at three different phases of the expedition.

- Before – during the stage from Planning until Announcement funds will be needed from stake-holders who are friendly to the Plan. DX Foundations, Clubs, Vendors, Commercial entities, and private donations.
- After announcement until departure will seek small numerous donations from the general amateur radio public. This seems to be the make-or-break inflection of the whole operation. Unless **during** the middle phase enough funds are secured, then the expedition will not be able to proceed according to this Plan. A clear cut-off has to be made prior to expenses paid that are non-recoverable. Yet, there may be some expenses that are paid out that are non-recoverable even in the event of the cancelation of the expedition.
- During on-island and post expedition phase – where appreciated support during the well run expedition is expected. In addition, OQRS may contribute a small portion to the income to cover costs already paid and fund the distribution of QSL. “Swag” is also something that will be offered – both in the spirit of celebrating the expedition, but also (with the Vision and PR/Marketing ideas) emphasize the island itself. In a time and age of increased awareness of environmental impact and climate change, anything (everything) that can be done to highlight the beauty and magnificence of the Island may draw in more appeal than simply trying to re-pay a Expedition Team for their hobby.

More, TBR...

9.7 Transportation

The route to the LHI site is by air. Flights route through Australia.

The flight for the trip originates in Seattle, Washington.

The flight will take two stops (Los Angeles and then Sydney) before the last hop on DASH-8 aircraft to LHI.

The airlines used are *Alaska Airlines*² and *Qantas* appears to be the ideal choice.

9.7.1 Freight

There is a need to transport a significant amount of heavy equipment. By “freight” simply that this equipment is a Checked-Bag item:

- First-aid equipment. What can make simple problems less difficult? Pain medication, anti-histamines, digestive aids, anti-acid, sleep aids, ace-bandage, sling, anti-bacterial, cuts and abrasions. Beyond mild lacerations, advanced medical *treatment* would be necessary.
- FM/Communications equipment. Simple HT for the *host* of the site *and* the operators of the expedition. Especially when first aid is needed and no cell phones are working. Reaching the people who are *not* part of the expedition who can help render aid is critical.
- Backup clothing, backup shelter. Balance weight and size against how often it may be possible to re-clean clothes. Assume the worst – laundry may not be something easily found. It may be required to find a way to rinse and dry clothes without any services whatsoever. Expect “Commando Mode”.
- Antennas. Compact and extended. One, maybe two pre-fitted for 40-10m
- Feed-lines. LMR-240 or RG-8X at correct multiples NOT resonant on the bands.

²Just for the frequent-flier points. It does not really matter which airline is used. Except – there are some anecdotes floating around of certain airlines in the Pacific presenting problems for DX'peditions.

- DC Power supply. Switching, not linear.
- Tuner. Automatic, plus spare wire for loading coils – the climate may present environmental conditions that require the “pre-fixed” antenna to need adjustments. Radial wire too.
- Rigging parts. Cinches, guy lines, markers, stakes, flags.
- Extra food. Just-Add-Hot-Water. ³
- TBR...

What is NOT shipped as freight but carry-on must include

- Transceivers – Despite any weight restrictions, these need to be carried on – padded, and in ‘day packs’ so they easily slide under seats.
- Amplifiers – Same story. Somewhat more rigid, but their sensitivity is mechanical mostly. Power supply transformers increase the inertia of the amplifier and unless the unit is *designed* for air-travel it must not be checked in. $\rho = mv$ Momentum is mass times velocity. A linear solid state amplifier is 25 lbs. If the case is “thrown” the change in momentum would be destructive for the internal unit. They are not made to be thrown. Carry these on.
- Hand-Held Transceivers (HT) and related. These can probably be put into Checked Luggage actually.
- The most basic “Field-Day” wire antenna solution (in case of the worst outcome – that the equipment that was supposed to arrive does not.) The worst that can happen just might happen. Having a spool of fine wire in the radio bag can probably turn a trip with zero QSO into one with a fair showing!
- A partial-set of the Ten Essentials – extra food, clothing, and so on within reason. The site *is* a resort after all.

It is to be evaluated yet if it makes sense to pre-ship all of the heavy equipment through a hired customs agent and process so that before we step onto the plane to LHI, the equipment is already on site at the operating location waiting for use.

9.8 Equipment

This is just an initial list, that will be updated

The basic equipment list for **Station 1**

- A K3 transceiver (100W, ATU)
- A paddle (Bencher BY-1 or by choice of operator – with all pigtail wiring for that paddle already configured for that radio)
- A KPA-500 PA
- A KAT-500 Tuner
- A headset with boom mic.
- A laptop computer (Windows, with common software), wired-mouse
- A station is directly linked to at most two antennas. These configurations are fixed.

³A personal lesson learned – always travel with at least a week worth of freeze dried food “just add water” type. You never know what kind of dietary issues may come up or what the local cuisine may offer. A healthy digestive tract is very important, right?

- External USB sound card - UR22 Steinberg
- Audio (3.5mm) cables.
- USB (with FTDI interface) cables.
- More, TBR...

The basic equipment list for **Station 2** (run concurrently for the compatible mode)

- A KX3 transceiver (10W)
- A headset with boom mic.
- A laptop computer (Windows, with common software), wired-mouse
- A station is directly linked to one antenna.
- External USB sound card - UR22 Steinberg
- Audio (3.5mm) cables.
- USB (with FTDI interface) cables.
- More, TBR...

Per site equipment

- Use of local Internet provider (or potentially remote Internet provider such as Starlink or facsimile, TBD).
- More, TBR...

Per antenna equipment

- Support structures for vertical configuration (VDA - French design), or mono-pole with center fed or end fed wire
- Radials as needed per antenna
- Feed-line RG-8X or LMR-240 from antenna feed to station.
- Band-pass filter between antenna and station(s) per antenna.⁴
- Guy support line (para-cord), stakes, shackles, cam-lock cinches.
- Flagging, Safety markers, signage.
- More, TBR...

9.9 Shack Layout

More, TBR...

⁴On solo-expedition, this is not required.

9.10 OP Schedule

The objective is to work all hours of the day and night but since there is only one operator on this trip (so far), the way to schedule it is:

12-14 hours ON, *six hours max off*, and then keep cycling. Eventually every three days, the “ON” time cycles through the daylight, evening, night and early morning cyclically.

For example if we start on a Monday, then (local time) the schedule looks like:

Time Range (UTC+10.5)	Activity
0600 - 1800	Work
1800 - 2200	Sleep
2200 - 1000	Work
1000 - 1600	Sleep
1600 - 0400	Work

Table 4: Likely schedule for shifting operating during different hours of the 24 hour day so all of the dominant modes for those times are worked.

And so it goes. A staggered approach gives opportunity to focus on a part of the day with dedication, and shift the schedule so that the operator can still get a reasonable amount of time to rest, eat and attend to other goals of the trip.

If there were other Team members, the objective would be to complement the schedules such that the station was getting the most use in the full 24 hour day.

Even though the operator of this expedition may be asleep, half of the world is not – and wants to work LHI.

9.11 Training

The training that should be focused on is in the areas of:

1. CW operation: Morse Runner at 27 w.p.m.
2. Antenna setup: Construction, guying, feed line setup, tuning to each band with VNA device and analyzer.
3. Station setup: Pretend we are on the island, unpack and setup the station in simulated bare room.
4. Power supply malfunction. What do we do when power is lost?
5. Device malfunction. What do we do when tuner, amplifier or transceiver is lost?
6. How are logs saved and backed up?
7. How are QSO’s uploaded?
8. How are ClubLog (Livestream) connections re-established?
9. What is the “script” to use on CW, SSB?
10. More, TBR...

9.12 Shelter

Shelter seems to be covered by the Beachcomber Lodge facility on the island.

More, TBR...

9.13 Food

The intent is to cook prepared meals that are mostly a Just-Add-Water approach. A tourist destination warrants tourist pricing. Plus, more importantly – time spent travel to and from restaurants eats into the operating time (pun intended). A lesson from the software-engineering world: “Put the snacks in front of the computer so you do not have to go far. Keep coding.”

Translation for DX’pedition: “Keep the snacks and food close. Less travel, less time wasted, more QSO.”

If there was a Team, then the food/logistics units would be tasked to maintain a on-call food and beverage steward to keep the operator IN the chair as much as possible – Until their shift is over and they can rest!

It may be hash, but this is not a vacation. It’s an expedition. It’s not just a matter of QSO per dollar. It’s a matter also of QSO per minute.

9.14 Sanitation

It’s a Lodge meant for tourists. I think in this case for LHI, there is going to be provision for sanitation.

9.15 Logistics

More, TBR...

9.16 Customs

More, TBR...

9.17 Safety

More, TBR...

9.18 Medical

More, TBR...

9.19 QSLing

LoTW is a given.

But the paper QSL option may require assistance. It’s unclear at this writing if the paper QSL manager is going to be required.

More, TBR...

9.20 Publicity

More, TBR...

10 OP Team Member Concerns

More, TBD...

10.1 Knowledge

More, TBD...

10.1.1 Working DX, especially DX'pedition

More, TBD...

10.1.2 How much awareness of topic

More, TBD...

10.1.3 How much awareness of DX reports

More, TBD...

10.1.4 How well connected

More, TBD...

10.2 Time

The time issue boils down to having 3 weeks to spend getting packed, travel, operate and return. Based on past experiences of other DX'p there are chances that time may be stretched to deal with unforeseen issues in the travel arrangements.

The planning phases where the team member is involved also will occupy a considerable amount of time. Months of time will be spent to go over the plan, refinements, adjustments and getting the team on-board.

In a perfect world, where travel arrangements and equipment arrives on time, the ideal team can be present. But, things are bound to change and circumstances may warrant changes to the team simply due to logistics challenges that make people drop out of the team.

The Plan has to be sensitive to the make up of the team – whichever team goes. Although, part of the decision making process on the part of the Leader has to decide if the final resulting team is in fact the right team to go – there may be a wave-off if things are not just right with respect to the composition of the team and organization.

10.3 Money

It will be somewhat expensive. As said in the Budget section, the estimation at least is \$10,000 per person to simply go. Airfare, lodging and food should make up a majority of that budget. The other costs for consumable expenses should come out of the membership “buy-in”. But the capital expenses should not be a liability on the individual team members.

For the experienced DX'p member, the assumption should be maintained that *membership* is being part of the team. It's purely voluntary and members who go *want to be there*.

As such the “*buy-in*” is simply considered their fare paid on their own to be present at the site and participate with the operations.

The cost of doing this is for the most part borne on the individual members as stated. The goal of the Plan is to minimize the capital costs for equipment and material that make the expedition successful.

Some parts of this plan will require personal equipment to be used. In a small set of cases (band-pass filters or other quasi-consumables like coaxial cable), the operating stations themselves need to be provided primarily by the operators themselves.

This means personal transceivers, laptops are a minimum. We will have to see how easy it will be to acquire power amplifiers (500W or less). Use of 1,500W amplifiers may be ruled out simply because of the necessary power source required. The current draw for a 1,500W amplifier is roughly 240VAC at 20A per amplifier. That is almost 5KW of power just for the amplifier. A 500W PA a third of that power requirement from the AC mains.

Each member will also have to account for their own funding for contingencies. In the rare case of utter emergencies, the team can try to do the best it can to help. But unless it's a catastrophe, the members should be self-reliant with respect to make it through contingencies. This means:

- A current health insurance policy
- A personal liability insurance policy
- Resources to transfer and relocate off the island if needs must.
- Realizing that the whole endeavor is a voluntary operation and the Team Leader, Organizer has no way to foresee any calamity like weather, geopolitical unrest, natural disaster, or consequences external to LHI that would make it difficult or impossible to relocate in a timely fashion.
- The effort made to plan and secure the site is subject to the conditions and consequences placed on the host of the site. Even the host is subject to the same sort of risks (albeit rare) that can befall the team.

Each member must take their own personal responsibility to treat this Plan for what it is – a plan for what should go well. But, at the same time realize that planning also includes allocation for our best estimate of “what-if’s” that may occur.

10.4 Skills

Having skills working DX is a requirement. Contesting, pile-up management, resilience, patience, operating style that sides with being brief will prevail.

The skills of doing this Plan with the right members means that the team members can hear well, speak well, and think fast-on-their-feet. We can strive for perfection and assume we will never reach it, but we can strive for proficiency and do our best to maintain it.

The laundry list of skills we assign to the Team are these, but not limited to

- Operating skills (multi mode specializations desired)
- Multi-operation station environment.
- Station build-out (antenna deployment, cabling, equipment power, station organization and safety)
- Computer software – use and configuration of logging software is key.
- Meals, camp-craft, ability to rig (bailing wire and duct tape) a solution with the limited amount of equipment, parts and hardware that may be available. Scouting skills are useful.
- Medical treatment – Knowledge of CPR, first-aid, and moreover has each Team member done their homework to bring and have on hand any special medications they need for nominal performance. There are certain diseases that do not fit well with a DX’pedition and it is recommended that each Team Member have a complete physical check-up prior to going. This includes Dental and Vision checks also. An abscessed tooth or vision (or hearing) impairment can be a liability for themselves and the team.
- Does each member have an awareness of *Followership* – meaning can they happily take direction? Can they disagree, but commit? Can they provide feedback in a positive way – even if it’s strongly against the grain, accept the decisions of the Leader? Can they leave their ego at home and work as a team-member and help others achieve great things as a team-member?
- Fitness – Again, personal fitness both mentally and physically is required. Trouble coping with adversity, as well as trouble exerting energy to lift, move, and partake in the elements of station construction are issues to explore. Honesty with oneself is key. Honesty with the team is another key.

- Flexibility vs. Resilience – The team will without a doubt need to adapt to changing conditions. There is always change. It's the one constant!

And the flip-side to that coin is what do each member have to resolve that adversity? How strong is their ability to resolve conflict and adversity – both with nature and with other people. What's their degree of resilience? The team needs people who are skilled, happy, and bendable without breaking – think “Gumby”.

- Skillful understanding of how DX-operations are performed with transceivers. Care to monitor and judge performance of amplifiers. Understanding of how to log with software, keyboards, and awareness of data-security and backup schemes.

10.5 Connections

How are the Team members connected to each other and how well connected are the Team members connected to others in the DX community. Their access to contacts may make it worthwhile to leverage those relationships (with permission) to accelerate our effort to fund-raise, plan, execute this operation on LHI.

11 Schedule

This is the timeline of tasks and events.

11.1 Pre-Planning

This document is the pre-planning event/task.

11.2 Peer Review

A small set of DX experts will help peer review this Plan

The minimum requirement before Pre-Roll is

1. License from VK
2. Approval from Site land-owner
3. Agreement to terms for use of Site for amateur radio (other guest concerns, QRM, interference, etc...have been accounted for)
4. Initial team selected based on the Plan with an expectation that the Team will change.

11.3 Pre-Roll

The pre roll-out will involve:

1. Website domain and content
2. QRZ entity registration
3. Big donor fund-raising
4. Solicitation with Clubs and Foundations
5. Further Team refinement
6. Further Operational Plan refinement.
7. Reservations put into book

11.4 Announcement

An announcement will be made in the usual places.

- Daily DX
- DX Clubs and Foundation
- Etc...

11.5 Preparations

As a preparation, the entire station setup will be replicated with actual hardware on a site.

- This means designing, building and setup of all antennas together.
- Setup of all radios, tuners, amplifiers, band-pass filters, coax feed.⁵
- Setup and configuration of local private network LAN.⁶
- Setup and configuration of all computers, keyers, head-sets.
- Setup and configuration of external network access
- Review of band-plan and operational schedule.
- More, TBR...

11.5.1 Antennas

The antennas will be vertical. Two (TBR) antenna will be made for the expedition. They are simply modeled after the “caged vertical” design of popular *DX Commander* antennas.

1. Antenna #1 will be a multi-band vertical rigged for 10, 12, 17, 80 meters.
2. Antenna #2 will be a multi-band vertical rigged for 15, 20, 30, 40 meters.

(An initial guess. The mapping of band to antenna is not finalized, TBR)

The impact is with SO2R, with this configuration, the operator is not going to be adept to work CW on two bands at once. It's a good goal later, but for this expedition, it is unlikely.

So in CW mode, one band at a time.

The same is true for SSB – one band at a time.

For FT-8, the environment is different. It will be possible to work at the same time **two bands for FT-8**.

There are at most 16 combinations, but not all of them make sense for the same time of day considering propagation. It would be likely that the grouping of high bands with other high bands is ideal. Plus it would be likely that (at night) low bands with other low bands would be ideal.

As the first few days of operation unfold, the choice to re-rig the vertical will be made to facilitate a mapping for high and low bands that optimizes the antenna duty cycle for the FT-8 mode.

When the operation is taking the bonus of working the RSGB IOTA the operation will be single radio, not SO2R classification.

⁵At time of writing, a single, solo operation will not require the use of band-pass filters.

⁶At time of writing, no local private network is required. Each node will have access to the upstream data sink while good Internet connectivity is maintained.

11.5.2 Radio Setup

HF Radio #1 – Elecraft K3/100/ATU. This is the authors QTH radio and has been configured to work with the amplifier and tuner at the home QTH.

The radio does not have a sub-receiver. TBD.

HF Radio #2 Elecraft KX3/10. Backup radio

HF Radio #3 FM for on-island communication. Yaesu FT-8900 at the base. HT radios (Kenwood TBR and Yaesu XV-6, FT2D)

11.5.3 Power Setup

Power supplies for giving 13.8V DC will be brought.

11.5.4 Tuner Setup

More, TBR

11.5.5 Amplifier Setup

More, TBR

11.6 Pre-Ship

Subject to weight and travel restrictions, per the Plan, pre-ship the items as noted that would exceed travel limits and improve efficiency in the trip by having less equipment to manage during the flight with the team.

List, TBR

- TBR...

11.7 QRV

QRV begins when the last member is on-route to the LHI site by air.

QRV involves several steps once it is underway

1. All members have boarded and are on flights towards LHI.
2. At LHI, a full day is spent collecting, indexing and sorting gear that was pre-shipped and gear that travelled with the team members.
3. Allow for a day to acclimate, take that day to get personal gear situated, adjust to time-zone and rest from the journey. Rest is a weapon and working DX'p is a battle. A well rested team is a highly functional team.
4. Teams are divided into groups for handling Antennas, Stations and Equipment storage.
 - Antenna Team put up all antennas in TBR order. Verticals and other complex antennas (dipole and VDA). Safety markers, flagging, signage. Work with a representative of the Station team to mark and route coaxial cable to antennas. This includes the local 2 meter repeater system and distribution of HT radios.
 - Station Team set up, connect and unit-test (no RF) all transceivers, amplifiers, tuners, computers, hardware, antenna switches, pass-band filters, coax routing.

- Equipment Team stow equipment securely from pests, weather and keep out of the paths. Post operating schedules from Leader. Post meal-time and group meeting notifications. Manage in-site communications,
5. Based on schedule for OP and Sleep/Recreation set the team to begin operations. Notices will be sent as Internet access prevails to the stake-holders in the US and elsewhere about the status of QRV. Notification will be made to those stake-holders that operations are imminent.
 6. Start the OP schedule.
 7. Each day of schedule will involve a team tag-up for any issues that have not yet been raised on the spur of the moment. News, status and updates about the operational success conveyed to the team. Leaders will encourage and congratulate the team on the on-going effort and encourage maintaining proficient use of the bands.
 8. Leaders will take in advice and make any adjustments to Band Plan and operational schedule to suit as needs must.

12 Areas to Adapt

The list below is a virtual checklist of items and issues that should have been answered and resolved *prior to departure* as best they can.

Some of these items and issues can be resolved in advance with good planning (this document) but some of them are simply issues that are managed in the situation. The Plan is to put the right people on the team to manage stress and adversity well. The strength of the Team by way of this Plan is to successfully Adapt to the issues.

This Plan has a safety-pressure release valve – the release valve is this:

We are there to have fun

It is true that the point is to rack up good numbers and have steady rate for a good showing of the DX-operation. But, overall the Leader and Organizers realize there is an acute need first to make the experience enjoyable – to a point. There is no Plan to make everyone happy all of the time. But the Plan is to make the best of the situation – and if that means the Team has to adjust dramatically by changing the band plan (not work a band, or work more of a certain mode) due to constraints that are unforeseen, then the Team will adapt and move forward.

It may not be possible to have the most ideal work-around for the items on the list below, but this Plan will offer either actions to take to minimize or eliminate the risk to the operation. For example, the issue of “Wrong plugs” can be mitigated possibly by careful planning and packing checklists. We will run into “missing plugs” or “wrong plugs” without a doubt, but that kind of issue can be minimized with the exhaustive amount of Planning that must take place before QRV.

A checklist is a powerful tool.

The list of areas and issues to strive to resolve prior to QRV are as follows:

12.1 RF Noise

The reports and interviews suggest that there is not much local RF noise. When asked of recent DX’pedition leaders, they reported virtually no harmful RF noise. The island is remote enough from the Australian mainland (and other islands for that matter) to make excessive man-made noise from the area very low.

12.2 Lost Reservations

So far the reservations are solid but this is a reminder that the Plan is to be very repetitive in re-verifying the reservations for travel and lodging.

12.3 Family Emergency

The operator (the author) does not foresee a high risk of family emergency, although there is a family member that does have a preexisting condition that would be a show-stopper and require immediate fly-back. That situation is managed so the risk is extremely low.

12.4 No Power

The host of the site lives in his own domicile near the site of operation. In the event of lost power, it would render the DX'pedition suspended from operation. It is conceivable that LiPo batteries *could be* brought along for the trip, but there are strict rules about the types of batteries (capacity) so there will be some research done here.

12.5 Wrong Plugs

All of the power sources both AC and DC will be fitted with plugs that connect to the Australian standard for AC. Prior to the trip a demo (with replicated jacks and plugs) will be exercised. A small set of wiring sockets and some AWG #10-4 wire will be brought along *just in case some on-site re-wiring* is needed.

12.6 OTH Radar

There is not a lot that can be done for OTH. other than QSY to a band with better signal qualities. Everyone including the DX station is subject to OTH radar, and (with some research) it is probably more acute for those DX stations in the Pacific closer to the source of that OTH.

12.7 Extreme Weather

Horizontal rain, bitter cold, flood, upset society – Weather issues come down to careful planning and preparation. Even so, not every outlier weather system is going to be overcome. But the trend suggests blustery weather but manageable. The elevation of the site does not portend a huge risk of flood, but it may have an impact on travel and supplies (and power) to the site. Given the equilibrium of the population is local and has long time (and government controlled) access to the island, there is not a high risk of social unrest or conflict. But, in terms of the broader geopolitical situation in the Taiwan region, air travel and broader security issues are still a risk – albeit low. Low enough that the trip would not be impacted in all likelihood. In the event that it is affected, the island would be a refuge. The downside is the expense and logistics to finally migrate off the island as conditions improve.

By far, the most pressing concern is environmental. Wind and rain. The effect on both the stability of the station and the health and well being of the “Team”.

12.8 Equipment Failure

There is only so many back-ups that can be brought to the island without exceeding the nominal baggage inventory. There will be one (1) power amplifier (KPA-500) and one (1) auto-tuner (KAT-500). There will be a main transceiver (K3) and a backup transceiver (KX3). There will be one main antenna (DX Commander) and a backup mast for putting up a multi-band vertical if needs must.

The DC power source is a rugged device, but even that device could be affected by some mishap. The operation is looking for a light-weight backup that would allow the work to continue in the event the primary DC supply fails.

12.9 Illness

COVID, fever, infection, accidents, death.

In the broad scheme the only true risk to see here as worth mitigation is COVID and accidents. Fever, and infection may be caused by compound events (one bad event leading to another). And of course fatalities are part of life. But, as indicated – the site is relatively safe. The host is a multi-generation family that has been on the island from history. Safety appears to be a factor that is dealt with in that regard. The operator (author) is fully vaccinated and is in good health, there are no serious preconditions to worry about.

12.10 Unexpected Expenses

Immigration, transportation, lodgings.

The Australian government is not known for arbitrary and capricious impositions of costs for those who enter the country. To the author's best knowledge there is not wide-spread examples of the officials of the country taking advantage of tourists. The host of the facility is a well experienced host of past amateur radio operations. If word had got out that the host was *not* friendly to amateur radio operations, then the continued use of the Lodge would have been noted.

The airline is *Qantas* and this is also a good sign in terms of quality and customer service.

12.11 Inter-station Interference

Because there is likely only one operator, this issue is moot. But if two antennas are put up and a second laptop is used to run (perhaps) FT-8 while the other computer is used to log SSB then the potential for cross-band interference is possible. This is a subject that needs to be looked at again.

12.12 Physical Discomfort

There are some ways to mitigate this. One of the best is simply good posture and a decent sitting arrangement. If some level of support to the back and legs is achieved and good posture maintained, this might help. But externally, the weather (cold) would be an issue to deal with. From the interviews made of past DXpeditions, the air-tightness of the “shack” is not 100%. So dealing with cold and draft air is required.

12.13 Sleep Deprivation

A schedule that is realistic is one way to deal with this. Operators are human, and humans need sleep. No expectation is made or offered that the operation will exceed the nominal abilities of a regular human being. If the operators were seasoned DXpeditioner with an internal “grit” that let them grunt out excessive hours – that is on them to deal with the after-effect (which there would be) like quick to frustration, unease, unhappiness, ill temper, digestion issues, dehydration, exposure, etc...

Knowing one's limits is the essential requirement.

We're going to do no one any good, least of which ourselves as operators if we go beyond our mental and physical abilities.

12.14 Customs

Customs and officials raising issues.

The government is not known for routine chaos put onto visitors. There may be interesting questions about the equipment. In order to dispel any concerns and have some irrefutable authority about what the equipment is we will bring manuals, documents and references to third party resources that demonstrate the equipment is for private amateur use, non commercial, and safe to operate.

12.15 Travel Sickness

It is the opinion of the author that a good diet and calm mind can help mitigate this concern. Of course, there are some travel arrangements that are off the scale. The author has been (in his younger years) aboard vessels that fished crab in the Bearing Sea, and in and around the remotest parts of Alaska in true blue-water scenarios. Although it can be frightening, the dynamics on vessel's movements are always a concern. The lesson learned is the well known method of: Bland diet, keep eye on the horizon, calm the mind or stay busy. In the case where there is medical attention for the sickness, there are over the counter treatments that do help. These should be available in the pack-list.

12.16 Wind

Excessive wind (affects antennas, station security, and health)

As we discussed, wind can be excessive to the point of destroying the antenna system. One level of destruction is repairable, and the other level of destruction is not. We're not expecting the latter destructive case on Lord Howe Island. The operator (author) does have some machinist experience and fabrication knowledge so the "duct-tape and bailing wire" approach to troubleshooting is an option. But if the fiberglass masts are destroyed beyond suitable repair it may mean reducing the bands that can be worked, or simply going QRT.

12.17 Transportation

Transportation delay or failure (for people and equipment).

This actually one of the largest concerns – in that if only *some* of the equipment is delayed (due to weight or size) then it will cut into the amount of time we have to operate. We're not too concerned about the return trip home with equipment delays. It will get home when it does– the expedition will be over by then. But getting *to* the island with delays cuts into the precious time we have on the island to operate. The mitigation is either pre-ship a lot of gear (very expensive and time consuming), or to pack light – meaning to make choices of the antenna and radio equipment that *prevent* the likelihood that the important equipment is delayed.

When it comes to air travel, even domestically, there are always chances for delays. Interviews of past expeditions to LHI show that air travel to/from HLI are often impacted by weather. There was one report of an equipment status of the aircraft that required a five day delay for the aircraft to be re-inspected and certified for service. There is no mitigation for this other than finding strength to be patient and willing to change plans on the spur of the moment.

12.18 Natural Disasters

Fire, earthquake, tsunami, flood, heat, cold.

All possible, all very unlikely. Fire, Tsunami and Cold seem to be the highest on the list of probability. There will not be any safe place to be on the island if there was a Tsunami in the Pacific unless the island residents have set aside an escape plan to the most high-ground. Given that the population is so small (300) this is probably the case. More research should be put here to make sure. Fire is a danger of course, but as in domestic environments there are mitigations for early detection and fighting it. Cold – extreme cold would be an outlier event. To mitigate that the best we can means to bring warm clothing, use layers.

12.19 Pests

Pests - bugs, sharks, rats, the public at large.

There do not appear to be a high degree of annoying pests on Lord Howe Island. The rat population was decimated recently by active programs from the government. Bugs do not appear to be a high risk either. The island is not known to be inundated with a shark population – but it does not matter in this case – we're not going to be near the beach!

The public is likely the most dangerous “pest” (not trying to disparage the public) in most cases. Actions taken by even well intended public can sometimes render costly and dangerous outcomes. Care should be taken to inform, instruct and sign-off on deployments of the station, antenna and so on. And, it should be agreed with the host that activities will run 24 hours a day. Any conception of complete down-time is going to be negotiated with the host in advance so if the host requires a silent period, the Team is aware of it.

12.20 Sunburn

Extreme heat is not likely but a few things we must do on Lord Howe Island.

Sun exposure even in cold weather is a danger. A cloudy day still has UV and as most Seattle residents know: always bring sun-screen. In addition hats block some sun, long sleeve clothing, and outer-wear are useful. It is not going to excessively hot at this season on the island. So with extra layers to block sun we’re not expecting to overheat under all those layers.

12.21 Poor Comments

Poor and often illogical comments from the public on Message Reflectors.

One way to handle this – ignore it. The public response to anything is like a bell-curve. In the middle there is nominal and polite reaction. On the edges are two forms of caustic reaction. Personally, the author believes that the best way to deal with this issue is to simply ignore it.

Any amateur radio operator not pleased with the operation of a DX’pedition planned, paid for and executed by private individuals is more than welcome to plan, pay for and execute their own affair.

Organizations, clubs and foundations that contribute their own donations to prospective DX expeditions are another matter – they are placing a bet that the operation will be a modest success or better. And if in the event that the operation fails badly, they will expect some form of recompense to the extent that is reasonable and recoverable.

This operation to LHI is not that case. There has been no solicitation for support from any club, organization or foundation. If such support were to materialize, then every effort will be made to use such generous donations to the best possible outcome.

But aside from the groups or organizations that support (and may critique) the operation – the general amateur radio public either knows or will eventually learn that these efforts are selfless endeavors and the best way to handle the grumpy public is to ignore the bad and celebrate the good.

13 End Notes

Some notes that need to be organized:

More, TBD...

13.1 Host Information

Contacted site host at Beachcomber Lodge. Gary Payten

res@beachcomberlhi.com.au.

or by phone 61 (Australia) (02) - 6563 2032.)

13.2 More?

More, TBD...

A Maps

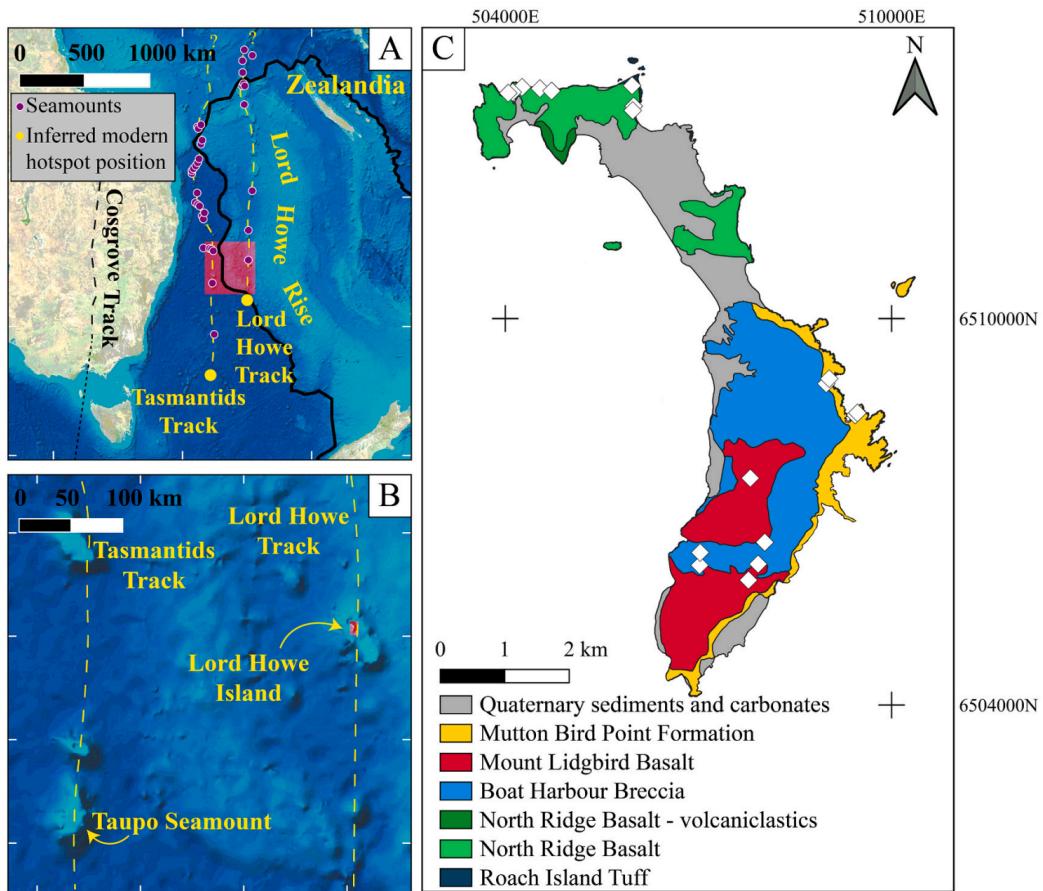


Figure 10: Source of caption:^[1] (A) Aerial map of the eastern edge of Australia showing the parallel Cosgrove, Tasmanid and Lord Howe hotspot tracks and border of the microcontinent Zealandia, and (B) inset showing the position of LHI. (C) Geological map of LHI, adapted from McDougall et al. (1981), with known sampling locations marked in with white diamonds (supplementary table T1). The closely dotted black line extending to the south of Australia marks the predicted extent of the Cosgrove hotspot track towards its present day location (Davies et al., 2015b). Units and shapefiles from the Geoscience Australia portal <https://portal.ga.gov.au>

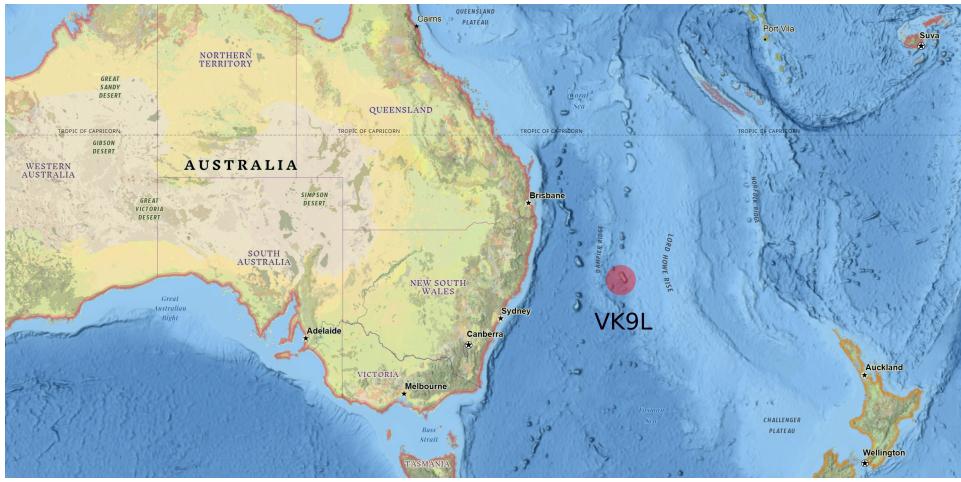


Figure 11: The GIS layers from the government of Australia depicting the proximity and relief of the sea floor with Australia and the geological region Zealandia.



Figure 12: The special refuge and natural area of the island makes up for most of the southern half and a portion of the northwestern tip of the island. Most of the settlement and development on the island is in the lower half of the upper half of the island.

B Draft Announcement Letter

When the announcement is made, this is a draft of the letter that will be sent out to the organizations that track new DX'peditions:

TBR – edits to draft.

To: The Daily DX, et.al.
From: Jeff Wandling W7BRS
Subject: DX'pedition to Lord Howe Island

To Whom it may concern,

This is an announcement of a DX'pedition to Lord Howe Island on or around July 19th through August 1st, 2024.

This is primarily a solo-expedition, but the possibility of last minute additions to the team is not ruled out. Contact the Organizer (above) for details.

Synopsis:

- * QRV on or around July 20-21st 2024 to Aug 1st, 2024
- * Bands expected 80-10m (SSB, CW, and FT-8)
- * Contest Bonus -- will be IOTA OC-004 during RSGB IOTA

The Goals:

1. To provide a fully immersive experience with DX'pedition planning, deployment and execution for a semi-rare entity in the Pacific (Oceania) region.
2. To experience the adventure of being on site relying on sound engineering judgement to setup and operate all common modes on as many HF bands as antenna permit (CW, SSB, Digi) on 80 meters through 10 meters.
3. To engage with the local population and learn stories, history and document and photograph the island with an effort to bring back to the amateur radio community another perspective about this island, people and history.
4. To lay a foundation for not only the Organizer to participate with future DX'peditions but also encourage and inspire those like the author who have dreamed for years to undertake the challenge of going on an adventure.

Note to Amateur Radio DX'ers:

- a) Expect the CW to be a little slower -- 24-27 w.p.m is the goal.
- b) Expect hours of operation to be based on limits imposed by weather, rest and band conditions.
- c) Expect most QSO to be within the region of East Asia, North-America and Europe. However, South American, African and Oceanic stations will also be worked as conditions allow.
- d) This is a privately funded DX'pedition (no expectation of donations or support) -- but they will be greatly appreciated.

Lord Howe Island is currently around number 63 on ClubLog.

Expect also that Paper QSL will be offered as well as LoTW (Log Book of the World) via QRSS.

If it was not for the support, training and advice from Northern California DX Foundation, Long Island DX Club, the Visalia DX Convention presenters and the Western Washington DX Club, this would not be possible.

Questions, comments and requests should be directed to the Organizer via EMAIL. That address is found at QRZ.com under the home-call W7BRS

Sincerely,

Jeff Wandling, W7BRS

C Potential Request for Support

Below is a draft of a letter that might be used if requests for support are made with agencies, companies, clubs or foundations.

TBR – edits to draft.

To: The Daily DX, et.al.
From: Jeff Wandling W7BRS
Subject: DX'pedition to Lord Howe Island

Dear Director of Operations,

DX'peditions are the life-blood of many amateur radio operators. Many pleasant parts of amateur radio are involved with the chasing after good DX contacts. The expedition that is going to happen this July through August is one of those expeditions.

The expedition is to Lord Howe Island, located about 700 km east of Australia.

I am a amateur radio operator who loves to chase DX and now I have a chance to (figureatively) put my ``feet in the sand''. As an active member of the Western Washington DX Club I am keeping close to those who teach and encourage new DX'peditions.

Your consideration of support is welcome. I assure my effort to implement this DX'pedition will leverage that support in the best way possible.

If you feel so inclined, any support you wish to offer will be greatly appreciated.

The inspiration to do this is borne from two sources:

1. After dreaming about doing a DX'pedition for about 14 years, I finally decided that unless action was taken to plan and go then it would never happen. The goal in the scoping document is to lay the ground work for future experiences with DX'peditions. I had to start somewhere, so why not go ``full throttle'' to a very exciting location.
2. The second form of inspiration was the DX community at large. It began with dialog with Bob Schmieder (email) in 2011 and culminated with many one on one discussions Mark Aaker K6UFO, Rusty Epps W60AT and Tom Berson ND2T.

Each of them, in their own way contributed to nudging me ever closer to the edge of deciding what to do and how to do it.

I look forward to hearing your signal and working your station in the

very near future from Lord Howe Island. Wish me luck?

Sincerely,

Jeff Wandling, W7BRS

Glossary

ATNO All Time New One. The first time an amateur logged a DX entity, that is what is known as an ATNO. For example, if an amateur “worked” (contacted and exchanged information) with TX5S and never before had worked Clipperton Island, then TX5S would be a ATNO for Clipperton Island. 18

Beam An antenna configuration where the main criteria is that the front to back gain ratio is pronounced. A vertical typically does not have this condition unless it is part of an array. See VDA. 16

CrankIR The Crank-IR is a vertical antenna made by SteppIR.

The SteppIR CrankIR is a portable Ham radio antenna that can be used for park activations. It has a standard model that can be used for 6M through 40M, and it also has an optional tunable Radial Unit. The antenna is lightweight, high performance, and extremely portable. It has a patented folded design that allows for a 40% reduction in size with only a 0.3dB reduction in performance compared to a full length vertical. 10

DQRM A small number of stations generate Deliberate QRM, known as DQRM, by transmitting on the frequency of a rare station in order to disrupt the operation. They do so anonymously, not identifying with their licensed call-sign and thereby contravening the terms of their transmitting licence. 18

EME Moon-bounce contact. Otherwise known as Earth-Moon-Earth. A highly coordinated method of sending and receiving messages over usually higher frequencies (like 6 meters) where the moon itself reflects the signal back to earth. 17

Fly-In A reference to a DX’pedition where the team can use commercial or chartered aircraft to land on the site for operation. No marine vessels are required. A beach-landing on an island by Zodiac or other water-craft is NOT fly-in. A helicopter lift operation from a deck of a sea trawler is NOT fly-in.

Fly-in DX’peditions are noted to be a bit easier because except for terrestrial travel from the airport to the operation site the bulk of the travel was by commercial or chartered aircraft. 8, 16

HF High frequency for amateur bands ranges that apply to the expedition are between 160 meters through 6 meters. The Australian amateur radio license will not permit operation on 60 meters. 2

IOTA Islands on the Air. Established in 1964, it promotes radio contacts with stations located on islands around the world to enrich the experience of all active on the amateur bands and, to do this, it draws on the widespread mystique surrounding islands. 8

LHI Lord Howe Island. 9

LoTW Log Book of the World. A free service provided by the ARRL to let amateur radio operators log contacts and receive confirmation for the QSO. Contacts collected and verified in the LoTW system are automatically eligible for credit for seeking ARRL contest awards, such as DXCC. 16

M/S Multi-single (M/S) refers to an operational condition where multiple operators are using a single radio. 16

OQRS An online system provided by third parties to help the amateur secure an authenticated QSL from the DX station. It either refers to a request for a QSL card or request that the QSO log be uploaded to an authorized body that can likewise provide authentication of the QSO for contest purposes. An example

is H44WA – using the OQRS system at ClubLub, an amateur can request a card and/or request the log be uploaded to LotW.

Usually OQRS expect a small donation. In the case of a paper QSL card, a donation is often required. 21

OTH Over the Horizon. Usually refers to radar signal from sovereign states or military operations. It's a wide band, loud, and terrible noise. In most cases, the OTH Radar signal is short time span. 32

QRV To begin operation with at least one station on the air actively taking CQ requests and logging. 8

QSL Confirmation of the QSO either via electronic means or more classically by paper cards with the pertinent information that is required by the officially sanctioned card-checker system. For example, ARRL DXCC card checkers are volunteers who check the authenticity of the QSL records and help file the paperwork with the ARRL to grant credit for those QSO as applicable. QSL'ing is itself an important part of the DX'pedition. Amateurs want confirmation either in LoTW form or QSL card. 16

RSGB The Radio Society of Great Britain (RSGB) is the United Kingdom's recognized national society for amateur radio operators. The society was founded in 1913 as the London Wireless Club, making it one of the oldest organizations of its kind in the world. 8

SO2R Single Operator, Two Radios. In this scenario a single operator uses two radios, simultaneously. 16

Ten Essentials In backpacking the [Ten Essentials](#) are below:

1. **Navigation:** map, altimeter, compass, (GPS device), (PLB, satellite communicator, or satellite phone), (extra batteries or battery pack)
2. **Headlamp:** plus extra batteries
3. **Sun protection:** sunglasses, sun-protective clothes, and sunscreen
4. **First aid:** including foot care and insect repellent (if required)
5. **Knife:** plus repair kit
6. **Fire:** matches, lighter and tinder, or stove as appropriate
7. **Shelter:** carried at all times (can be a lightweight emergency bivy)
8. **Extra food:** beyond minimum expectation
9. **Extra water:** beyond minimum expectation, or the means to purify
10. **Extra clothes:** sufficient to survive an emergency overnight

As this applies to amateur radio DX'peditions is subtle.

1. **Navigation:** Depending on where the intended location is for the operation, all of the above could apply. When the location is to a resort or lodge or location that has heavy traffic then some of the items are obviously not required. Then again, in emergency – if one had to relocate then even if the original location is well known, if the demands for relocation put the DX'pedition in a strange new location, those items would be useful. At a minimum – a map and a compass. In the modern era, a GPS might serve also.
2. All of these apply to DX'peditions no matter where or when the operation occurs. Exactly as noted above. Do not even debate it. **Headlamp, Sun protection, First aid, Extra food, Extra water, Extra clothes,**
3. **Knife:** plus repair kit. It is difficult to carry-on this item (i.e., impossible) but the item should be part of your checked-bag if that is part of the travel arrangement.

4. **Fire:** Even in a checked-bag situation, this can be a dangerous thing to bring. So re-calibrate this – in checked-bag a butane lighter might be passable. If the expedition is truly camp-style or backpacking style (tent and generator), then all of the original backpacking list items are required.
5. **Shelter:** This can be as simple as a reflective heat trapping sheet. In emergency it can serve as a shield from the sun, a barrier from the rain, and a signal marker for possible rescue. It can save your life.

Whatever the case may be, no matter where you go: Be Prepared.

This expedition to VK9L is going to bring those items that are deemed worth while for safety but not excessive given the amount of support that is available on the island.

In other words – put snack bars in your carry on luggage. You may be stuck at the airport waiting for a delayed flight and no food is available in your terminal for hours. 22

VDA Vertical Dipole Array. In the simplest form, the deployment of a two element vertical array. One element is the D.E. - *driven element* and the other element is the P.E. *parasitic element*. The D.E. is fed with coaxial cable to a balun then to the halves of the D.E. The P.E. is a single conducting wire or tube. The two vertical elements D.E. and P.E. are spaced apart and guyed. Careful tuning and adjustments made produce a very effective antenna system for deployments near salt-water. Gain in the neighborhood of 9:1 is not unheard of.

The French design variant is similar. Instead of two conducting vertical elements, there is a single non-conductive mast and the D.E. and P.E. are wire suspended from the apex of the mast to the base of the mast, spread apart mid-way down with a horizontal boom (also non-conductive). The shape of the wire (conducting element material) is rhombic. The gain is not as high as the metal version, but the speed at which the French VDA design can be raised and the simplicity of the design make it a preferred choice for a lot of DX'peditions.

Both styles are only effective near salt-water. Away from salt-water they do not have nearly the same gain potential. They are not recommended for locations that are near buildings, or too far from salt water. Within a couple hundred feet of salt-water is probably close enough. The beneficial effect is much better the closer the salt water is located. 23

VNA A Vector Network Analyzer (VNA) is a device that measures the power and characteristics of a high-speed signal, such as amplitude and phase, going into and out of a component or network. It can be used to measure the impedance of an antenna, which allows you to design a matching circuit to optimize the antenna's electrical match to its feed. 24

WSJT-X WSJT-X is a software package that is used to code and decode digital modes in amateur radio. It is a popular software program that has facilitated FT-8 mode throughout amateur radio use for the past several years. A common add-on to WSJT-X is JT-Alert.

For most DX operations, the DX station will run in F/H (Fox Hound) mode where the DX operation is the Fox and the general public amateur stations represent the Hound. The software WSJT-X has a dedicated setting to enable F/H mode. For regular modes as well as F/H mode – the software with some configuration required – will code (send) and decode (receive) the data and render it for the user – both the DX station and the DX chasing station.

The ARRL QST magazine has published several excellent articles about FT-8 and WSJT-X.

In particular the article by Al Rovner, K7AR – OCT 2023 - QST (PG. 53), An Introduction to WSJT's DXpedition Mode.

There is a lot to unpack but the software is very enjoyable to use. 18

References

- [1] Rogers, Angus, Michaela Flanigan, Oliver Nebel, Yona Nebel-Jacobsen, Xueying Wang, Richard J. Arculus, Laura Miller, et al. The Isotopic Origin of Lord Howe Island Reveals Secondary Mantle Plume Twinning in the Tasman Sea.