



# Bulletin



February 2018

## From the Pres

**Mike ND4V**

Well, it seems like it has been forever since we had a meeting. I hope everyone enjoyed the holiday party at the Down Wind Restaurant. Mr. Epps telling the story of the lost squadron was an interesting departure from our usual ham radio stuff. We were a bit cramped for space and I didn't get to circulate as much as I should have, but I enjoyed seeing you there even if I didn't tell you so!

By now everyone is aware of the cancellation of the Bouvet DXpetition. Mother nature wasn't cooperating and the complication of an engine problem on the ship led the Captain to declare it too dangerous to continue. I have nothing but admiration for the guys who attempt this stuff! This morning the ship was headed slowly to Capetown South Africa. Our thoughts are with the team and the ship's crew for a safe arrival.

Kosovo should be lighting up the bands for another week or two. The rule change allowing the inclusion of Kosovo into the DXCC entity list along with rumored ARRL bylaws changes has spurred some controversy. I'm making a spot on the meeting night agenda for us to talk about the DX Advisory Committee; the League; and what advice the SEDXC would offer to our Director. Judging from comments on the e-mail

*continued on page 2*

## INSIDE THIS ISSUE

- 1** From the Pres/Veep's Report
- 1** Around the Shack
- 2** Treasurer's Journal
- 3** Club Officers
- 5** DXpedition Funding Requests

## Veep's Report

**Dick K5TF**

### This Month's Meeting

Date/Time: **Thursday February 15<sup>th</sup> @ 7:30 PM**

Location: Rich Auditorium, Piedmont Hospital

Details at [www.sedxc.org](http://www.sedxc.org)

Program Title: **FT-8 in DXing**

Speaker: **Mike Cohen, AD4MC**

For all of you "Not Yet Converted DXers" who are wondering what all of the FT-8 spots are about on the DX Clusters, our January 18<sup>th</sup> program will be presented by Mike Cohen, AD4MC. A holder of Digital DXCC, Mike will tell us what FT-8 is all about, including the most recent enhancements in this new mode.

73,

**DICK K5TF** ❖

## Around the Shack

**Hal N4GG/4**

This month I'd like to talk about wire: specifically, wire for radials and where to get it. If you have a ground mounted vertical you most likely have or need radials under the antenna. This is true for quarter-wave tall verticals but also for most other heights – the exception being half-wave tall verticals. There are quite a few half-wave verticals on the market these days and they are usually sold with small counterpoises included, eliminating the need for radials on the ground. How that's possible is a good subject for a future column.

The vertical part of quarter-wave vertical presents an impedance of approximately 35 ohms. A high performance radial field will have a characteristic impedance of close to zero ohms with respect to a

*continued on page 3*

### **From the Pres (cont.)**

reflector, there are some strong opinions. I expect an interesting discussion that respects the opinion of those who agree to disagree!

FT-8 developers are working on a new DXpedition mode. The new mode is being designed to allow the DXpedition to increase their QSO rate substantially above the normal FT-8 rate. A snippet about the proposed mode:

*In FT8 DXpedition mode, QSOs between the DXpedition ("Fox") and calling stations ("Hounds") can be completed with as little as one Fox transmission per QSO. Moreover, Fox can transmit up to five signals simultaneously, thereby increasing the maximum possible QSO rate to 600/hour. With expected signal levels and likely levels of QRM, sustained rates of several hundred QSOs/hour are expected to be possible.*

More details are in a draft paper at:

[http://physics.princeton.edu/pulsar/k1jt/FT8\\_DXpedition\\_Mode.pdf](http://physics.princeton.edu/pulsar/k1jt/FT8_DXpedition_Mode.pdf)

Our speaker this month is Mike Cohen, AD4MC and his timely topic is FT-8. Since the new DX mode hasn't been released, I don't expect a demo ... but it sounds like learning to use regular FT-8 isn't a bad idea! I did work K1JT over the weekend. That's as close to a Nobel prize as I'll ever get HI HI.

It is time to begin thinking about who you want to serve as your officers next year! If you have an interest in one of the officer slots, just let it be known to me or any of the other officers. We also have several funding requests to act upon.

So, hope to see you at Panera Bread before the club meeting for an eyeball QSO.

73 es gud DX,

**Mike ND4V** ❖

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### **Treasurer's Journal**

**Jeff K1ZN**

Checkbook Balance as of Jan 2, 2018 = \$ \$9989.45

Checks written January:

-- CQ 160 Plaque Sponsor Fee of \$55.

73,

**Jeff K1ZN** ❖

## SEDXC OFFICERS

**President:** Mike Weathers, ND4V  
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**Vice President:** Dick Baxter, K5TF  
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## Appointed Positions

**SEDXC Bulletin Editor:** Clark Macaulay, WU4B  
[clark.macaulay@gmail.com](mailto:clark.macaulay@gmail.com)

**Membership Committee Chairman**  
Bill Barr, N4NX  
[n4nx@arrl.net](mailto:n4nx@arrl.net)

**Webmaster:** Chaz cone, W4GKF  
[w4gkf@chazcone.com](mailto:w4gkf@chazcone.com)

## Club Communications

**SEDXC Webpage:** [www.sedxc.org](http://www.sedxc.org)

**SEDXC Chat Room:** details on webpage

**SEDXC Reflector:** details on webpage

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vertical antenna. It's easy to tell how good a radial system is under a quarter-wave vertical. If an antenna analyzer tells you the antenna including the ground radials is 50 ohms, you have 15 ohms of equivalent impedance on the ground side and that's not good. At 1500 watts, that's 450 watts turning into heat in the radials and not being radiated. *The better the radial field the closer the antenna will appear to be 35 ohms.*

Both the ARRL Handbook and The Antenna Book deal extensively with how many radials and of what length are needed to achieve a "good ground." A rule-of-thumb is 64 radials, each a quarter wavelength long, will provide a near ideal ground under a vertical. It's important to realize however, that as you go past 32 radials the law of diminishing returns sets in and more radials produce very little gain in performance. At N4GG the short T-top vertical for 160 transmit is fed against 20 radials of random lengths. I used what I could squeeze onto the available land. That antenna works fine, but I am losing a dB or two to a much less-than-perfect ground system and every dB counts on 160. I have 200 counties confirmed on 160. You can do it too with 20 radials and some time in the chair.

So, now we finally come to the question: Where is all that wire for radials going to come from, knowing copper has gotten expensive?

64 quarter-wave radials for 160 meters is 8,600 feet of wire. In my humble opinion that's overkill for all but the most demanding installations. Don't let the "apparent need" for a ton of buried wire keep you off the low bands. 16 or even eight radials, of 65% the length of a quarter-wave will get you on the air, having fun and working DX.

Before we go looking for wire we should think about wire gauge. IMHO anything thinner than #24 is asking for trouble. Just walking on radials thinner than #24 can break them. The heavier the gauge wire the more physically robust your radial field will be, but more copper costs more money. Heavier wire will not give you a performance gain – it will just make your radials last longer.

Other wire characteristics matter too. Copper is excellent and solders easily, although solder connections on or in the ground will deteriorate in a few years. Silver soldering should be used for wire on or in the ground – but soldering is a good thing to avoid altogether. Terminate radials at the base of your vertical to a tie plate that's an inch or two above ground. Soldering at that point will hold up. Crimping works fine too. (*cont. on next page*)

## ***Around the Shack (cont.)***

Aluminum wire can't be readily soldered and it doesn't hold up well in contact with the ground. It's too bad, since very large spools of aluminum fence wire are available for a small price. Insulation is a non-factor. Radials can be made from insulated wire – the insulation has no effect on performance.

Okay, on to the subject of this month's column, where do we get all this copper wire we will need for a low-band vertical (or inverted-L)? And, how can we keep the cost down?

The first idea is to never stop looking. Below the tables at hamfests is a good place to find wire. The neighbor across the street once threw out a brand new 500' roll of #14 – I picked it up off the curb. When you look for wire you will find some, but it's a slow process.

Another place to find inexpensive or free wire is in your best friend's junk box. Most of us old-timers have been saving wire for years. We might give you some.

For immediate needs there is always the option to buy wire retail (a very not-ham-like thing to do).

Some sources for wire:

- The Wireman. [www.thewireman.com](http://www.thewireman.com). The Wireman carries tinned copper wire in several gauges, and they will negotiate the price a little for large quantities. I once bought 2,000 feet of #24 tinned copper at a great price from them. I got a discount just by asking for one. It was one continuous piece on a spool – very handy. I have made radials with that spool for years and the wire comes in handy for other things.
- Home Depot and Lowes. NOT house wire – it's too expensive. A good choice is CAT5 cable. A 1,000' box of CAT 5 cable costs about \$90. CAT5 is 4 twisted pair of #24 gauge insulated copper wire. A 1,000' box contains 8,000 feet of wire and that works out to about 1.1 cents per foot – you can't beat it. CAT5 can be easy/hard to work with. The outer jacket can easily be peeled off with your hands, but wear gloves. The four twisted pair can be separated from each other easily by hand. But, separating each of the twisted pairs into two separate wires is a huge chore and I think not worth the trouble. I use a twisted pair as a single wire – I just connect the wires together at each end. A 1,000' box of CAT5 yields 4,000 feet of wire in that case, and that's still a good deal.

The radials at N4GG are just what you might think you don't want to do: different lengths, different spacing around the compass, different gauges and some insulated and some not. They are all bent too, with some buried and some not. It works. Don't be intimidated by the search for the ideal ground!

A note – While I have enough ideas for this column to last darn-near forever, what subject would you like a page or two on? Please email me with ideas or requests: [N4GG@ARRL.NET](mailto:N4GG@ARRL.NET).

See you in the pileups...

Hal N4GG/4❖

## DXpedition Funding Requests

<b>Entity Name / Call Sign</b>	Baker & Howland Islands K1B
<b>Web page</b>	<a href="http://baker2018.net/">http://baker2018.net/</a>
<b>Team leader / number of members:</b>	<p>Team Leader - Donald Greenbaum, N1DG 11 operators total            James Brooks, 9V1YC - Heard Island, South Sandwich Island, Scarborough Reef, Clipperton Island, etc.            Ned Stearns, AA7A - Kingman Reef, South Sandwich Island, South Georgia Island, etc.            George Wallner, AA7JV - Willis Islets, Mellish Reef, Navassa Island, St. Peter/Paul Rock, etc.            Ken Tanuma, JN1THL - Rodriquez Island, Mauritius Island, Cambodia, Mozambique, etc.            Kevin Rowett, K6TD - Midway Atoll, Chesterfield Island, Mozambique            John Miller, K6MM - Wake Island, Palmyra Atoll, Navassa Island, etc.            Donald Greenbaum, N1DG - Wake Island, Midway Atoll, South Orkney Island, United Arab Emirates, Qatar, Mozambique, etc.            Dr. Arnie Shatz, N6HC - Kure Island, St. Brandon Island, Clipperton Island, Amsterdam Island, Swains Island, etc.            Tom Berson, ND2T - Scarborough Reef, Midway Atoll, Palmyra Atoll, Swains Island, etc.            Dave Farnsworth, WJ2O - Clipperton Island, Heard Island, Navassa Island, Mellish Reef            Tamas Pekarik, HA7RY - Willis Islets, Mellish Reef, Chesterfield Island, St Peter Paul Rock, Navassa Island</p>
<b>Approx. Date and duration of Dxpediton</b>	25 June to 9 July 2018
<b>QSL manager / QSL route</b>	Tom Harrell, N4XP, Box 333, Bethlehem, GA 30620
<b>Budget estimated for Dxpediton</b>	<p>Expenses:            Charter boat - \$364,500.00 (USD)            Cargo Shipping - \$13,000.00 (USD)            Agent &amp; Port Fees - \$5,000.00 (USD)            Landing Fees (Fish &amp; Wildlife) - \$19,650.00 (USD)            Shelter on Island - \$6,000.00 (USD)            Emergency Rations (Required by F&amp;W Permit)- \$2,520.00 (USD)            Kitchen &amp; Toilet supplies - \$1,000.00 (USD)            Generators - \$6,000.00 (USD)            Gas &amp; Oil - \$3,000.00 (USD)            Power Grid Supplies - \$500.00 (USD)            Lumber, Tables &amp; Chairs - \$500.00 (USD)            Computers &amp; Satellite Access - \$3,000.00 (USD)            QSL Printing &amp; Mailing - \$6,500.00 (USD)  <b>TOTAL BUDGET EXPENSES: \$431,170.00 (USD)</b></p> <p>Budget Income:            Operator Fees - \$220,000.00 (USD)            Clubs &amp; Foundations - \$113,000.00 (USD)            Individuals - \$25,000.00 (USD)            OQSL &amp; Direct QSL's - \$68,000.00 (USD)            Sale of Shelters - \$2,000.00 (USD)            Sale of Generators - \$3,000.00 (USD)  <b>TOTAL BUDGETED INCOME: \$431,000.00 (USD)</b></p>

<b>Position on most wanted list:</b>	After Bouvet is completed, Baker Howland will be #3 overall
<b>Landing permit/operating permission approved.</b>	Yes
<b>Last time this entity was activated</b>	2002
<b>Typical interval between activations</b>	16 years
<b>Anyone planning to activate this entity before your DXpedition</b>	No
<b>Objective / Strategy</b>	<p>Work as many stations around the world to give them an all-time new entity. We plan to have 5 stations on the air on CW, SSB, RTTY and FT8.</p> <p>Equipment Summary:</p> <p>RIGS include Elecraft K3S' and KPA1500 solid state amplifiers</p> <p>Antennas include: 2 element Steppir Yagis for 10-30 meters  7 element 6 meter M2 Yagi  43 ft verticals for 40/80/160 with top hats. Height limited by the Fish &amp; Wildlife permit</p>
<b>Callsign/Age of youngest Team member</b>	James Brooks, 50, and our official social media person is Marty Sullaway, KC1CWF
<b>SEDXC member initiating request</b>	Tom Harrell, N4XP 0 co-leader
<b>SEDXC member(s) participating</b>	Tom Harrell, N4XP
<b>Funding amount requested</b>	\$3,000
<b>Send Funds to:</b>	<p>Donald Greenbaum  N1DG  27 Pill Hill Lane  Duxbury, MA 02332  Phone: 781-424-5978</p> <p>E-Mail: don@aurumtel.com</p>
<b>SEDXC logo on QSL cards?</b>	Yes
<b>SEDXC logo on web page?</b>	Yes
<b>Additional comments:</b>	

## Perseverance DX Group (PDXG.net)



Dear DX Club / Foundation,

It will have been almost ten years since the last Ducie Island DXpedition. Ducie is an uninhabited Pacific island located in the Gambier Island Group, approximately 540 kilometers east of Pitcairn Island and 6,000 kilometers southeast of Hawaii. Currently #27 on the ClubLog's Most Wanted List, there is no scheduled air or sea transportation to the island. Call sign VP6D was issued to our team; we have travel visas and landing permission to conduct a DXpedition in this restricted "Marine Protected Area".

The expedition ship **Braveheart** will provide transportation and logistics. Braveheart has a proven track record of DXpedition support, as does our team. Project cost is estimated at ~\$175,000(USD) with the most expensive items being the ship and freight.

With a limited number of available and approved ships, serious DXpeditions to ecologically sensitive / restricted entities are complex and expensive projects. Each VP6D team member committed \$12,000(USD) with the hope their financial outlay will be reduced by donations and grants. Their payment does **not** include transportation and living expenses to Mangareva, French Polynesia, estimated at several thousand US Dollars for most team members. At project conclusion we will publish a financial summary. Any surplus funds will be evenly divided amongst the on-island team members.

We appreciate your consideration and hope your organization can support our project. Please consider the timing of any donation; we must pay all expenses before leaving home, including a significant non-refundable deposit to Braveheart that was paid in December, 2017 and full payment before sailing.

Sincerely,  
Ducie 2018 Team

Donations in US funds can be made by check or money order to:

Ducie 2018, LLC  
Gene Spinelli  
PO Box 69965  
Tucson, AZ  
85737-0025 USA

- PayPal to: [donate@vp6d.com](mailto:donate@vp6d.com)
- Outside the US may use PayPal or contact [k5gs@arrl.net](mailto:k5gs@arrl.net) for wire transfer details

## General Information

- Planned on island operation: October 19 – Nov 3, 2018
  - Estimated cost: ~ \$175,000(USD)
  - Does not include operator's travel to Mangareva, French Polynesia, accommodations, or meals
  - On -island operator fee \$12,000(USD) per person, plus travel
- 14 Operators:
  - Dave K3EL (Team Leader), Pista HA5AO and Les W2LK (Co-leaders), Heye DJ9RR, Mike WA6O, Jacky ZL3CW, Arnie N6HC, Steve W1SRD, Chris N6WM, Laci HA0NAR, Ricardo PY2PT, Walt N6XG, Gene K5GS (Treasurer), currently one open position.
  - A team of A-1 operators with extensive DXpedition and/or contest experience
- Number of Stations: 7
- QSO Target: 80,000 - 100,000
- Bands/Modes: 160 - 10 m, CW/SSB/Digital – FT8
- Planned on-island: 13 – 14 days
- Equipment: Elecraft K-line (planned)
- Antennas: Various verticals and Yagis (planned)
- QSL Managers: K5GS / M0URX
  - Log Search / OQRS at: [www.vp6d.com](http://www.vp6d.com)
  - Buro cards free
- Uploads:
  - Log uploads from the island to our on-line Log at [www.vp6d.com](http://www.vp6d.com)
  - LoTW upload 6 months after project end
- Commitment to Sponsors:
  - Sponsor logos will appear on VP6D.com, Powerpoint presentations and QSL cards
  - If provided, photos with sponsor flag and/or tee shirts
  - Financial summary will be sent to Club and Foundation sponsors
  - Article will be sent to each sponsoring organization that requests a copy
- Received a **Northern California DX Foundation** (NCDXF) grant, Dec. 2017
- Website: [www.vp6d.com](http://www.vp6d.com)

Please address questions to: Gene, [k5gs@arrl.net](mailto:k5gs@arrl.net)