Volume 5, Issue 6

7/2022

the exchange

SWODXA
WWW.SWODXA.ORG
SouthWest Ohio DX Association

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Club Call : W8EX

INSIDE THIS ISSUE:

The Prez says…..

Greetings! It is my honor and pleasure to be the newest President of SWODXA. My biggest concern is that I can lead SWODXA half as well as Tom, NR8Z, did for the past several years. Please let me know if I am not. As always, YOUR input is important and a needed component of a successful and vibrant club.

Thanks to all of you who helped and participated in the DX Dinner and the DX Forum. The feedback was great and we have already received a table of 12 request from our VK brothers for 2023!

We have started our summer "break" and our next meeting is September 8th. However, that doesn't mean that the club is dormant. Hopefully we will all be "in the chair", either in person or remotely, filling band slots and chasing an ATNO. When you do that, think of the club and the newsletter. If you worked an ATNO, let me know. How did you do it? If you are fixing your antennas, have acquired a new rig, or trying a new band or mode? Let me know. The other members want to know!

Another way to communicate is via the email reflector. If you hear a less common entity, send an email to the reflector BEFORE you spot it! If you know of a potential new member, orif someone is in need due to sickness, let us all know. We aren't nosey, but we can't help if we don't know about a situation. In any event, have a safe summer, Gud Hunting, and see you in the pileups.

"I'll see you, in September….."

73,

Bill—AJ8B

SWODXA Club News

Below is the schedule of upcoming meetings and topics. All of the topics are subject to change. Since our meetings will be "hybrid" meetings in that they will be live and via ZOOM, I hope to see you at many of the meetings. Did you know that you can add the ZOOM app to your Smart Phone and join the meetings no matter where you are? Other than potential data charges, the meeting is free!

Meeting Date	Topic
September 8th	N1MM+ Refresh with K8ZT—Anthony Luscre—Just in time for contest season
October 13th	Building a Multi-Band Slot Antenna with W6NBC—John Portune
November 10th	Cleaning & Repairing Traps by

DX Grant Committee Update

The new DX Grant Committee, consisting of Joe, W8GEX (Grant Manager), K8DV—Dave, and K4YJ—Dwight, has been busy reviewing our current process to ensure that it is up to date.

The Committee will use a slightly different process to collect votes to determine if a particular proposal will be eligible for funding. This modified process achieves several things including:

-> More member participation as this gives every member an opportunity to vote.

-> Since we are getting more attendees via ZOOM, we need a way to ensure that those participating via ZOOM will feel included and their votes counted.

-> Members can provide input instead of just a show of hands.

-> It will let us know who needs a particular entity as an ATNO or just band slots. This will have no effect on the money allocated as that is determined by the Most Wanted Countries list.

(cont. on next page)

SWODXA Club News

DX Grant Committee Update (cont.)

Effective 9/1/2022, The DX Grant Committee (DXGC) will review the application and make a recommendation as they currently do. If the DXC says "No", then it is done.

However, if the DXGC says "Yes", and earmarks an amount based on their Most Wanted Standing, they would make their recommendation known at the next meeting, or via email if we are in the summer break. After the meeting, each member will receive an email and have the opportunity to go to a protected web page to cast their vote on the Proposal.

The email, similar to the one shown below, will be sent to all members: An example of the voting webpage follows the email below. { Just an example}

From: the SWODXA DX Grant Committee

Greetings,

It is time to vote on our $XXX donation to the CY0S team going to Sable Island this fall. Voting will be open for one week starting today. A summary of the DXpedition is on the voting page and is pasted in at the bottom of this email.

Voting Page URL: www.swodxa.com/DXpedition_Voting
Password: DX-IS (all caps, hyphen in the middle)

Thank you.

73,

Joe Pater, W8GEX
SWODXA DX Grant Manager

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SWODXA Club News

DX Grant Committee Update (cont.)

{{{{{{{{{{{{{{{{{{ On the Voting Webpage }}}}}}}}}}}}}}}}}}

The SWODXA DX Grant Committee has reviewed the funding request from the CY0S DXpedition team and is recommending a $XXX donation. A summary of the funding request is included below:

Sable Island: Clublog most wanted #51

Team members: WA4DAN (leader), N2EIN, K4LZE, K5YY, K4UEE, WW2DX, W0GJ, N2TU, W4DKS

Dates: 8-9 days in October-November 2022; exact dates TBD by Parks Canada

Cost: $65,000: $46k transportation; $21k lodging on island

Website: http://cy0dxpedition.net/index.html (not much info yet)

Normally, a top 50 country would rate a $XXX donation. The team is experienced; this will be the sixth trip to CY0 for team leader WA4DAN. The last significant operation was CY0P in 2013 who made 14,000 QSOs.

Obtaining permission for this operation required extensive negotiations with Parks Canada. It is likely that CY0 operations will be few and far between in the future.

Callsign (required) _____

___ I Support a $XXX Donation to CY0S

__ No Donation

___ Is this an All Time New One (ATNO) for you?

___ I already have this entity confirmed

(cont. on next page)

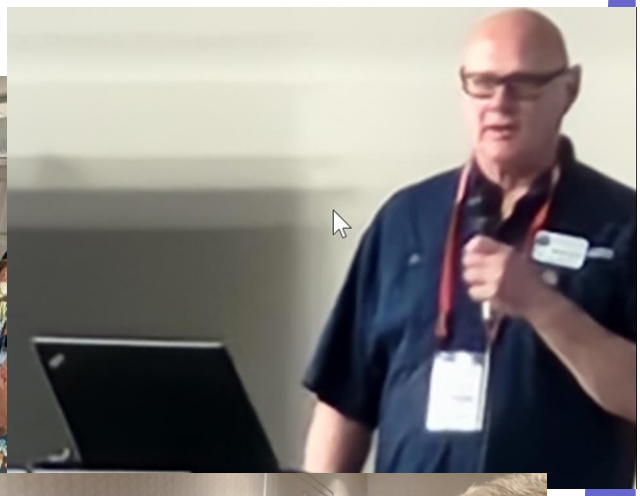
SWODXA Club News

DX Dinner Update

The final head count for the DX Dinner was 348 tickets sold. We were very concerned just to break the 300 barrier so the committee was very pleased to end at 348. The cover page shows a variety of highlights from the Dinner and pictures from the DX Dinner, DX Forum, and the Hospitality Suite are shown below. Please pass along any comments that you had as well as anything you heard from others.

We have already held our post Hamvention meeting in order to identify those things that we need to improve upon. AND..we already have a great speaker lined up for 2023. Details on that at a future time.

Figure 1 N2BJ – Barry




KO4KZU


TROPI CANNON
W4BXCC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ICOM


ICOM

SWODXA Club News

2022 SWODXA DX Achievement Award

Bernie, W3UR, Accepting the plaque from NR8Z, Tom, on behalf of Joe Taylor, K1JT.

In addition to acknowledging exemplary DXpeditions, the Southwest Ohio DX Association (SWODXA) recognizes individuals or groups who have advanced the art of and made a significant impact on DXing. We are excited to announce that the 2022 SWODXA DX Achievement Award goes to Dr. Joseph H. Taylor Jr., K1JT, for creating digital communication modes that have totally revolutionized DXing.

The WSJT-X digital modes have changed how we do digital DXing, literally overnight. These new digital modes provide weak signal decoding capabilities not only on HF but also terrestrial, meteorscatter and moonbounce on the V/UHF bands. HF Bands are open at times that traditional wisdom said were not capable of long-distance communication, especially at the bottom of the sunspot cycle. And, FT8 has helped level the playing field for "little pistol" DXers. Plus, the WSPR tool delivers propagation insights that will benefit DXers for a long time to come.

SWODXA is excited to recognize the communication revolution of WSJT-X with the 2022 DX Achievement Award to Dr. Taylor. Please join us in recognizing Dr. Taylor's contribution to DXing.

The plaque arrived safely today -- and a handsome plaque it is!

Many thanks to you and the SWODXA DX Association for this honor. I'm only sorry that Covid and other circumstances made it impossible for me to attend your DX Dinner at Hamvention.

With all best wishes,

-- Joe Taylor, K1JT

SWODXA Club News

Do you have ARRL Dues coming up? If so, you can Help SWODXA while renewing.

New Club Commission Program

One of the benefits of being an ARRL Affiliated Club is a commission for recruiting new ARRL members and securing timely ARRL member renewals. The commission structure has been updated and the process has changed to make it more lucrative and easier for the clubs. All membership dues are sent to ARRL to be processed and the club receives a commission payment directly from ARRL. No more complicated adjusting funds around credit cards, checks and cash. ARRL does all the processing. As a result, your club could earn money while promoting the many benefits and programs of ARRL to ensure that amateur radio is protected and continues to be strong.

Q. How much commission does the club earn for new and renewing members?
A. Each new ARRL member earns the club a $15.00 commission. New members are defined as never having been a member or a returning member that has not been a member for two years. Each renewal now earns the club a $5.00 commission. There is no limit to the amount a club can earn in this program.

Q. If we have a question on how to process the forms, who do we contact?
A. Questions can be directed to clubs@arrl.org or contact Member Services at ARRL.

More information can be found at http://www.arrl.org/affiliated-club-benefits. If your annual dues are coming up, let Bill, AJ8B, know and he will coordinate the submission so that SWODXA will benefit as well.

SWODXA Club News

Your Chance to Help Out!

In about 45 days, the Milford Amateur Radio Club will host the Cincinnati Hamfest. This will occur on Saturday, August 13th. SWODXA will have an information table. This table consists of a "scrolling" slide set being shown on a monitor. We also have thumb drives to give away that contain a copy of every newsletter.

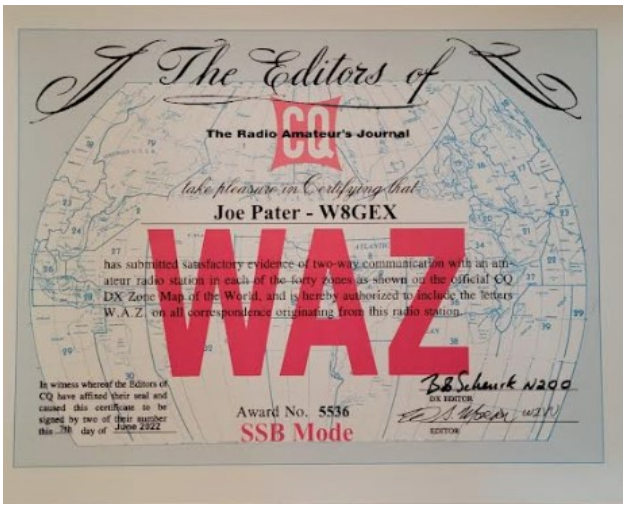
I would like to take some time to stroll around the "bone yard" looking for my next project. To do that, I need a few volunteers to "man" the table to answer questions and hand our literature. That is all you need to do. Please let me know if you will be available to work a 30 minute shift.

Many people say "Let me know what I can do" - Here is an opportunity to help your club!

Joe Does it Again!

W8GEX, Joe, achieved another | honor when he completed his quest for WAZ—SSB. Joe recently completed 10 Band DXCC, 10 Band WAS, and Honor Roll.

Congrats Joe on a great accomplishment!



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NEW: CQ WAZ AWARD Program Options

This announcement was sent to me by Joe, W8GEX from José – N4BAA. This is good news from CQ and Jose. Thanks to Joe for thinking of us!

WAZ plaques are now available for any WAZ award! Watch YouTube Video link here: N4BAA CQ WAZ PLAQUE DISCUSSION

Effective Sept 1, 2022, CQ Magazine will no longer provide the Hand Lettered CQ WAZ paper certificate for free. CQ WAZ Award recipients have 4 award options:

1. Accept the standard award offering which is a High-Definition PDF file. This file can be printed in color and framed and is very nice. This award is delivered immediately with award letter, thus, no waiting.

2. Select the traditional CQ WAZ Hand-Lettered award: cost is $19.00 and includes shipping world-wide. This award option is managed by CQ Magazine and can take up to 180 days to receive.

3. Select a Level I plaque: 7” x 9” two-tone engraved wood plaque: cost is $57 US / $100 International and includes shipping. Deliver time is under 30 days for US stations and less than 60 days internationally.

4. Select a Level II plaque: 9” x 12” Floating Etched Acrylic over Black Wood: cost is $91 US / $135 International. and includes shipping. Deliver time is roughly 30 days for US stations and less than 60 days internationally depending on actual address.

The intent for this program is to respond to the ever-increasing demand for more options that are still very personalized as well as very elegant. Not every ham is able to achieve the requirements for a 5BWAZ or 160 Meter plaque, so I am making this offering to everyone!

All questions or inquiries as well as plaque orders should be directed to the CQ WAZ Manager via email to n4baa@arrl.net or postal mail via QRZ.com address.

All plaque data will be taken directly from the information provided in your email. The CQ WAZ manager will not be responsible for errors in data provided by the recipient other than AWARD type and Award number.

(cont. on next page)

NEW: CQ WAZ AWARD Program Options (cont.)

To Place Order: send the information below via email to n4baa@arrl.net or via post mail to my QRZ.com address and please double check spelling etc.

Email Subject line should be: "WAZ PLAQUE ORDER – YOUR CALL"

Call Sign:
Desired Name on Plaque:

WAZ Award Type (example: MIXED, RTTY, 15M CW, EME, etc)
SERIAL NUMBER on award:
Date on Award:

Award Desired: - Level 1 plaque - $57 US / $100 International
- Level 2 plaque - $91 US / $135 International

Mailing Address:

Payment should be made via PayPal to n4baa@arrl.net, or check (drawn from US bank), and sent QRZ.com address for N4BAA. The CQ WAZ manager will email you with order information and payment confirmation.

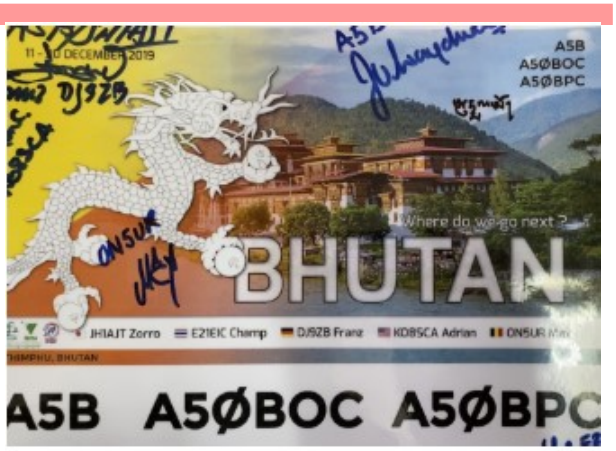
You will be notified vie email when the order is placed. US hams will receive their personalized WAZ plaque within 30 days. International hams will receive their award in less than 60 days depending on actual location.

Notification will also include when award ships.

Thank you for participating in "The" Premier DX Award Program!

73, God Bless and Good DXing, José – N4BAA
CQ WAZ Manager

Bhutan: The Land of the Thunder Dragon



This article is reprinted here with the permission of INDEXA and KI4KWR, Steve Molo. This first appeared in the INDEXA Newsletter, Spring 2022. I really enjoyed it and hope you will as well.

"The arrow of the accomplished master will not be seen when it is released, only when it hits the target." --- Bhutanese Proverb

As the plane was approaching Bhutan, after a three-hour flight from Bangkok, I was gazing in awe through the plane window at the snow-capped, majestic peaks, 8,000 meters high, of the eastern ridges of the Himalayan Mountains. Although the altitude of the plane was 11,000 meters, it felt as if the wings of the plane were almost touching the mountain peaks. It was an impressive, unforgettable sight.

Anyone who has flown into Bhutan's Paro International Airport, situated at an altitude of 2,200 meters, is familiar with the rollercoaster landing and we were preparing for it. Some passengers were tightly holding their cameras, while others were tightly holding on to . . . their seats.

The short landing strip, surrounded by very high mountains, and the unexpected gusts of wind, make the airport approach extremely difficult. Drukair, the Royal Bhutan Airlines, says that there are only a handful of pilots who are certified to fly the Airbus A319 plane into Paro.

A short video of the landing could be found on YouTube at: https://www.youtube.com/watch?v=SbLHah4XUwk

Bhutan:

Bhutan is a constitutional monarchy, a small mountainous kingdom, in South Asia, nestled between India and China, with Buddhism being the official religion and with a population of about 750,000 people, many of whom live in its capital city, Thimphu.

Bhutan is the only country in the world to have outlawed tobacco, and the Bhutanese government uses Gross National Happiness rather than GDP to measure its overall health. . It is interesting to learn that Bhutan does not have one single traffic light; a policeman actually directs the traffic in the capital city. Most of the subjects studied in the Bhutanese schools are taught in English with a few subjects taught in the official Bhutanese language Dzongkha.

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Bhutan: Land of the Thunder Dragon (cont.)

So almost everyone we met had a good command of the English language, allowing us to communicate and better understand the amazing culture and customs of our hosts.

Many tourists visit the country to see the famous Buddhist temples and to hike the many beautiful valleys and mountains, and a few of them are even attempting to trek the difficult Snowman Trek. In 1993, however, the Bhutanese government started to limit the number of tourists that visit the country each year, to preserve the unique Bhutanese way of life.

The Team:

Our DXpedition started on December 11, 2019 in the Bangkok air- port (Thailand) where the team members from 5 different countries met after long flights from their home countries. The team of 4 people Champ (E21EIC), Franz (DJ9ZB), Max (ON5UR) and Adrian (KO8SCA) was led by Zorro (JH1AJT) and his indispensable assistant Ishida Hiroaki.

A50BOC team members holding the INDEXA flag

We were not in Bhutan to tackle the difficult and world-famous 25 day Snowman Trek, but we were there to undertake a similarly difficult task: to put Bhutan on the air in the low bands.

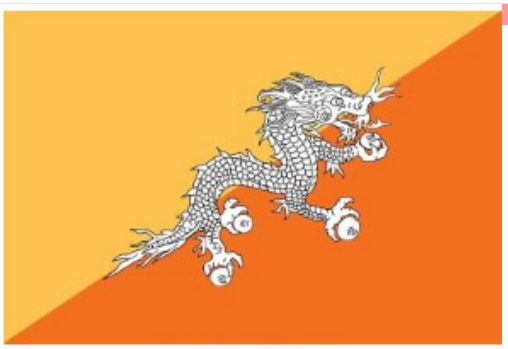
Judging by the amount of equipment that we loaded into the truck at Paro airport, we were prepared to make a full-scale effort. Bhutan is listed at position 101 on the ClubLog DXCC Most Wanted List and at position 90 on Low Bands on the global log, but for North America, on Low Bands, the position drops down to an incredible number 12! As Zorro was in Bhutan in an official capacity, the team was welcomed at the Paro Airport, which sped up the customs and immigration process. And that was a nice surprise, since we were bringing such large quantities of radio equipment, and other materials, including a telescope that Zorro donated to the local college.

(Cont. on Next Page)


At 2200 meter high, the airport in Paro, Bhutan is certainly unusual and beautiful


The small truck that took the team from Paro Airport to Royal Thimphu College was full of radio equipment

Bhutan: Land of the Thunder Dragon (cont.)



The Flag of Bhutan

The Operating Location:

"Kuzu zangpo la!" says our driver, Kuman, welcoming us into the car. Kuman, dressed in the beautiful Bhutanese garment, a long robe called "Gho", took us from Paro airport to Royal Thimphu College (http://www.rtc.bt), located on the outskirts of the capital city. This was to be our comfortable home for the next 10 days in Bhutan. We were housed on the student campus, which was almost deserted because of their students' winter holiday. Kuman was our designated driver during our stay in Bhutan and we used this opportunity, during our time off from the radio, to visit some of the interesting and famous sites around the capital city

We also had the luck to be in Bhutan during the Bhutanese National Day, on December 17, and managed to see the National Day Festivities in the large city stadium, an impressive display of culture, dancing, tradition as well as local foods from the 20 Bhutanese districts, "Dzongkhags", around the country.

Our first dinner in Bhutan consisted of the national dish, Ema Datshi (chili peppers and cheese), which was followed by Momos, Tibetan-style dumplings with minced meat, cheese and cabbage. Bhutan- ese's love of chili peppers, "ema", is obvious: to be considered delicious, the food, be it breakfast, lunch or dinner, has to be spicy, very spicy! If you are not from Bhutan, it takes a while to get used to the pleasure-pain of chili peppers.

Radio Equipment:

Royal Thimphu College, the first private college in Bhutan, also houses a radio club and a few radio towers with antennas for multiple bands. The radio club was created to allow access by young Bhutanese college students so they would be exposed to the wonderful world of ham radio.

The radio club uses a myriad of products of international engineering to create the amazing world of the amateur radio pileups: Japanese engineering for radios, Icom 7610, Icom 7300 and TS590S; Italian and Bulgarian engineering for amplifiers Expert 1.3KW and ACOM 1000; Russian engineering for HF passband filters from LBS; Ukrainian technology RigExpert AA-600 for antenna analyzer; and USA technology for logging and FT8, N1MM and WSJT software. Because the Icom IC-7610 radio has RX antenna inputs, an impressive S/R noise ratio and a large pan-adapter, this radio was dedicated to the 160M band.

The noise level around the campus is S7/S8 so we had to move the Beverage antenna a few times, further away into the forest, to find a spot that decreased the noise level to about S2/S3 and increased our chances of working weak stations.

Although the temperatures outside were low, we were lucky to have had good weather to install the new antennas. A few young Bhutanese men were genuinely interested and curious about amateur radio and helped us tremendously with the antenna installation.

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Bhutan: Land of the Thunder Dragon (cont.)

Most of the radio equipment was donated by SEISA GROUP, founded, and run by Mr. Zorro Miyazawa (JH1AJT). Over the years, during each visit to Bhutan, Zorro brought additional equipment for the radio club and was able to build an impressive arsenal of radios and antennas to help overcome the difficulties that arise from trying to make QSOs from a country surrounded by the tallest mountains in the world. Together with Zorro, Champ (E21EIC) has visited Bhutan 15 times and because of that he knows all the details of the location, the antennas and the radio equipment, which allowed the team to start operating during the first day of our arrival.

Zorro was able to obtain Bhutanese personal amateur radio licenses and call signs for all DXpedition team members as well as privileges for the team to operate, for the first time ever from Bhutan, in the 60M band, where the team was able to make over 1000 QSOs.

Our Team Leader:

In his capacity as the official Olympic Consultant to Bhutan, Zorro had meetings back-to-back almost daily with the Bhutanese officials, but he always found time to also enjoy operating the radio, especially during the night and during the 160M band openings to Japan. Zorro has been visiting Bhutan for many years, and, through his position as CEO of SEISA and FGC (Foundation for Global Children), he is helping Bhutan to qualify and participate at the Olympic Games, which this year will be taking place in Tokyo, Japan.

Bhutan has been previously participated in 1984 at the Los Angeles Olympic Games as a wild card, but this time with Zorro's help, by his providing access to trainers and infrastructure, one Bhutanese athlete in Archery was able to qualify to the Olympic Games in Tokyo.

In addition, Zorro has supported the establishment of Paralympic Committee and development of Para- athletes in Bhutan. Bhutan Paralympic Committee is one of the most active committees in the world which is work- ing on the development of youth to participate in Paralympic Games. Zorro is working closely with the president of the Bhutan Paralympic Committee, HRH Princess Euphelma Choden Wangchuck, and was able to help Bhutan participate in the Paralympic Games for the first time and that was not an easy achievement in a Buddhist country where handicapped persons feel ashamed and tend to stay mostly indoors.

The Royal Thimphu College gate architecture is amazingly beautiful

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Bhutan: Land of the Thunder Dragon (cont.)

The Prince's visit:

The highlight of our DXpedition was the visit of HRH Prince Dasho Jigyel Ugyen-Wangchuck of Bhutan, his sister and his entourage to the Royal Thimphu College radio club station. On December 18, 2019, the Prince, who is the half-brother of the King of Bhutan and a good friend of Zorro, spent some time in front of the radio with Zorro's guidance to make a few QSOs with his own callsign.

It is indeed a rare encounter for someone to witness such an event or to be able to make a QSO with such a personality. Some hams around the world were lucky enough to have worked with other personalities that are also ham operators, such as (JY1) His Majesty the late King Hussein bin Talal of Jordan (SK), or (EA0JC) Don Juan Carlos de Borbón, the former King of Spain.

The army personnel and security detail that were part of the Prince's entourage were also interested to hear about ham radio and our team took the time to explain how it all works and how it differentiates from the radio communication that the army is using.

The DXpedition team presented the Prince with memorabilia connected to the activation of Bhutan with the call signs A50BOC and A5B as well as a copy of the book DX-WORLD-GUIDE, written by Franz DJ9ZB.

Zorro presented the Prince with an impressive gift: a 236-years-old Japanese samurai sword made by a famous Japanese swordsmith. It was not only an amazing gift, but for obvious reasons, also an incredibly difficult item to take out of Japan, and much work was required by Zorro and his office team to ensure that everyone at customs in Japan, Thailand and Bhutan were informed correctly about this rare item.

This gift was partly in response to Zorro's receiving as a gift from the Prince, during his previous visit to Bhutan, a beautiful traditional Bhutanese Patang sword, made for the King of Bhutan.

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Bears are living in the forests around the Royal Thimphu College

The radio shack (top right room) and living quarters for the A50BOC team

Bhutan: Land of the Thunder Dragon (cont.)

Statistics:

Many of the A50BOC DXpedition statistics are available on ClubLog (https://clublog.org/charts/?c=A50BOC#r) but here are a few highlights:

Total number of QSOs: 10707
Total number of 160M/60M QSOs: 936 /1184
Mode distribution (approx.) CW/SSB/FT8: 25%/25%/50%
Almost 20% of our QSOs were an ATNO
Continent distribution EU/AS/NA: 75% / 20% / 3%

Final Words:

The difficulty of operating from a country surrounded by tall mountains, during a solar minimum with many hours of total RF silence and our focus on low bands operation, showed up in the total number of QSOs as well as the large number of FT8 QSOs in our log.

Our main enemy on low bands was the omni-present RF noise that burdens our modern society and after many trials and errors with RX antennas, we were able to overcome this obstacle toward the end of the DXpedition.

Our main goals were achieved: putting all continents (including NA) in the low bands in our log, improving the radio club station with additional equipment and antennas, and operating for the first time in the 60M band.

But above all, having fun with the radio and making new friends is usually the best outcome of any DXpedition and A50BOC was no exception to this rule. The club station is still there, and Zorro and his team will continue to visit Bhutan a few times a year, adding this rare entity in the logs of the deserving. This is most likely just the beginning, the tip of the iceberg, of more amazing things that will be happening in the Land of the Thunder Dragon!

December 2019

A50BOC & A5B team: Jh1AHT, E21EIC, DJ9ZB, ON5UR & KO8SCA

Written by Adrian, KO8SCA

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Bhutan: Land of the Thunder Dragon (cont.)

Young Bhutanese men are helping with antenna installation under Champ's (E21EIC) supervision

Adrian (KO8SCA) and Franz (DJ9ZB) installing 160M vertical transmitting antenna

After a long day of work installing antennas, the A50BOC team is thanking the young Bhutanese men for their help

The small truck that took the team from Paro Airport to Royal Thimphu College was full of radio equipment

The radio shack (top right room) and living quarters for the A50BOC team

The Royal Thimphu College gate architecture is amazingly beautiful

At 2200 meter high, the airport in Paro, Bhutan is certainly unusual and beautiful

Collins S-Line Restoration, On Air Operations, and 100 DXCC Entities—Part 5

By Dave, K8DV—k8dv@cinci.rr.com

In the first 4 parts we covered getting the S-Line back on the air and the start of on-air operations. We are now roughly three months into on-air operations and it has been a lot of fun for me and there have been a few pleasant surprises as well.

I had all but forgotten how much fun it can be just to tune up and down the band listening. In today's world of automation and spotting networks, we have gotten to the point of aim, shoot, fire, log and confirm. I ask you, when was the last time you actually took a hold of the VFO dial and tuned up and down the band? It is amazing what you hear when you do this and just listen to your fellow hams chatting and what you learn about other areas of the world and the type of equipment folks are using on the air these days.

As you know, my original goal was to see how long it would take me to work 100 countries/entities with the S-Line. So far after three months I have worked 70; all on 20 SSB running just the S-Line barefoot at 100 watts. For a pleasant surprise I managed to pick up 3 new phone countries to add to my DXCC phone total. This is no easy task when you are hovering around 300 for phone. Two of those have already confirmed on LoTW and I have sent the QSL card for the third.

I have taken a break for the next few months as six meter season is here and I want to spend some time working on achieving 6M DXCC. I currently stand at 80 worked and 77 confirmed. Also sitting at 49 states worked and confirmed, needing only Alaska (KL7) to finish WAS on 6M.

Although I have had the S-Line on, keeping it warmed up and ready, I have a plan to pick up my on air operations of the S-Line after the six meter season fades out later this summer.

Until next time, keep those radios warmed up and keep the bands hopping with activities.

Stay tuned as we continue our march to 100 countries.

73,

Dave

Interview with ES5RY– Toomas

I have had several great QSOs with Toomas so it was natural to ask him to answer a few questions for us. He can be reached at ***es5ry@erau.ee***

AJ8B: How did you first get interested in amateur radio?
ES5RY: It was a long time ago when I was 3-4 years old. My father (SK UR2DE/ ES5DE) dealt with this radio thing and it was so exciting! When I was 7, I found out what anode voltage is when I stuck my fingers to the end lamp of the 1Kv transmitter. This experience will be remembered for life and more of my fingers I haven't stuck everywhere. Smile!

In 1973 I received the call sign of the hearing assistant (UR2-083-593), and in 1979 I already received my first personal call sign, UR2RME.At the time, it was necessary to know the morse code, without this skill I did not get a short wave permit. In 1991, I received the call sign ES5RY, which I use now.

Ordinary QSO seemed so boring that I began to look for exciting solutions to develop myself in this area. I discovered for myself competitions that seemed super exciting.

I was committed to competitions for 30 years and now my age is beginning to signal that it is time to pass on the message to young people who I am happy to help with my 30 years of experience.

AJ8B: Do you have a favorite band or mode?
ES5RY: From the end August to the end of May-HF bands 160m-10m. THEN, the Middle of June to end of August 6m -70cm. I like all bands, but maybe my favorite is 30m.

For Modes: Last 3 half years focus on FT8/FT4 but I like all of the Digimodes/ RTTY and off course our old mode CW.

AJ8B: What time of day and days do you like to operate?
ES5RY: Now I am retired and have a lot of free time .Mostly local mornings and evenings are good for me to work. Don't forget propagations!

AJ8B: Any secrets to your success?
ES5RY: Give your heart your hobby and you will understand!

(Cont. on Next Page)

Interview with ES5RY (cont.)

AJ8B: Any tips that you can share?
ES5RY: Radio communication begins with the antenna! Who thinks that the transceiver, it can argue with me! If you share the contents of the matter from the right end -the rest comes from itself. And yet, listen and learn from the aces. The end amplifier is the last thing that you should worry about .

AJ8B: Describe what you are currently using:
ES5RY: As we all know, communication in cities is practically impossible, that's after you have to move to the countryside, where QRM is non-existent .
My antenna park, which I use is as follows:

10m -6el Yagi 24m high AGL / 15m- 6el yagi 27m high AGL
20m -6el Yagi 30m high AGL / 40m-2el Quad boom is 27m high AGL
80m -GP and 4square / 160m- INV-L 10m-40m are all antennae rotatable.

WARC Bands:

FD4 dipole for 12m and 17m 20m high.
The 30m-2el Quad boom is 27m high and antenna is rotatable.

High bands (summer time only)

6m-5 element Yagi. / 4m-5el Yagi / 2m-12M2 / 70cm-28M2.

There are two IC775DSP, IC7100 transceivers and I also use IC 706MKIIG.
No amplifiers.

AJ8B: What advice do you have for those of us trying to break pileups to work DX?
ES5RY: That's a good question! Listen, Listen and Listen. (or look at your display)

AJ8B: What is your favorite contest?
ES5RY: Favorite is 100% CQWW (all modes) ,but ARRL DX (all modes) and Russian DX (was)!

(Cont. on Next Page)

Interview with ES5RY (cont.)

AJ8B: Any QSLing hints?
ES5RY: QSL is my weakest side -since I am QSL manager for Estonia's top stations ES9C, ES6Q then on paper QSL can only get direct. But be sure -ES9C is LoTW joined and think that in the near future it will also add ES6Q,ES5Q and ES5RY.Smile!

AJ8B: What coaching/advice would you give new amateurs?
ES5RY: Don't worry, be "radioactive"!

AJ8B: If I were to stop by for a visit, what local place would you want us to visit?
ES5RY: WoW-best answer is for you:https://www.visitestonia.com/en/ and be sure visit TOP station ES9C!

AJ8B: What local food would you want me to try?
ES5RY: You will get an answer to the previous question! Smile

AJ8B: Thanks for taking the time to answer my questions. Is there anything you would like to share with us?
ES5RY: I think that I was able to share everything that I thought was important. Of course, a lot remained to myself, but WRTC 2014 and WRTC 2018 year will be especially remembered! K9VV, Fred and VE3EJ,John, have a special place in my heart. Fantastic experience.
There are plenty of photos of me and Estonian competition stations online.
It was a pleasure to meet you, and I hope to see you again and again on the air.

Stay healthy.

73! Tom, ES5RY

Countdown to

W4DXCC by SEDCO

September 23-24, 2022
LeConte Hotel and Convention Center, Pigeon Forge, TN
Formerly: Mainstay Hotel and Conference Center
****THIS IS THE SAME LOCATION!!** Just a name change**

W4DXCC by SEDCO is a DX and Contest Convention held in Pigeon Forge, Tennessee and it's our 17th year. If you're a DXer, Contester or just interested in amateur radio you should attend this event.

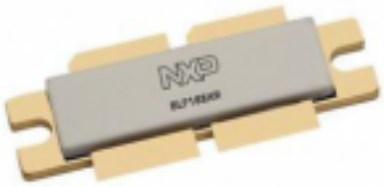
The attendees enjoy the fellowship of other hams and share experiences. They meet old friends and make new ones. Once you attend you will be back every year. Representatives from TOP equipment manufacturers will be on hand to demo new equipment and answer your questions one on one. It's an easy drive from 2/3rds of the country.

This will be the most informative and relaxed DX and Contest convention you have ever attended, not to mention the many great prize drawings.

Radio BootCamp
Each year convention attendees can attend a day long Radio BootCamp training session on Friday. Experienced hams teach new and old hams about building shacks and antennas, learn how to operate better while DXing and Contesting. There is something for every ham, new and old.

It's time to make your reservations

1) Call LeConte Hotel and Convention Center at 865-428-8350 to book your room, ASK for W4DXCC by SEDCO special rates –
2) Go Online at **W4DXCC.com** for Convention and Banquet tickets.



For More Details Visit us at
www.W4DXCC.COM

A Year of DX—Bob Locher—W9KNI

I received a copy of "A Year of DX" as a Christmas present in 2010, a signed copy no less.! I have read it at least 3 times if not more. As recently as this spring, I spun through the pages as if it were the first time. What appeals to me is that I "feel" that I am in the shack with Bob as he pursues the DX Marathon.

At a few general ham club meetings, the SWODXA table at the Cincinnati Hamfest and at the Georgetown Hamfest, I was asked "Why do you like to talk to other countries? What is the appeal?" To be honest, I was at a loss to put together a succinct answer.

However, Bob provides the answer. I know that you will enjoy this excerpt and I hope you will use it to entice other non-DXers to give DXing a try!

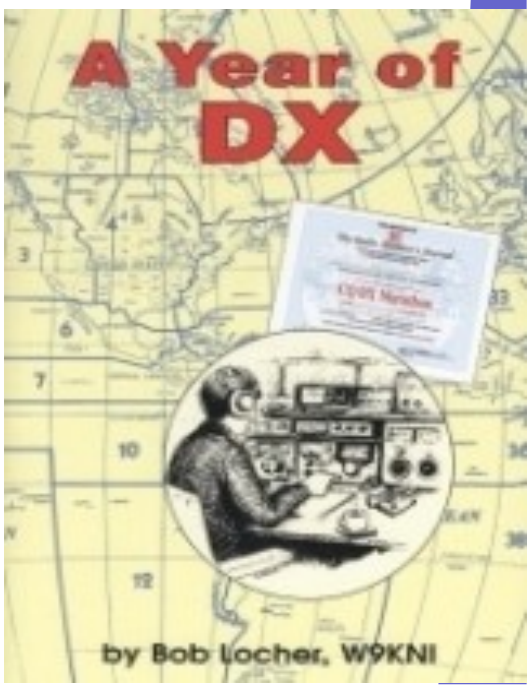
I was able to contact Bob and he gave me permission to reprint this chapter. This book is available via Ham Supply. (https://www.hamsupply.com/) I might even consider loaning you my copy!

Question: How do we amateurs explain the fascination of amateur radio DXing?

Answer: Very badly

As committed DXers, we know why we love DXing, right? Of course, we do but we invariably stumble badly when we try to put the reasons for our love into words, even in trying to explain it to ourselves. When we try to explain the fascination of DXing to non-DXers, generally we really screw up we rarely if ever get it right.

Now, up to a point, maybe this is a good thing if we did get it right in explaining it to outsiders our bands would be overrun. But on the other hand, most hams today would agree that we need more people using our bands, especially younger ones, and to help make this happen we must sell what we have. And to sell what we have we must first understand what we have.



So, what is it that makes us erect towers and antennas, structures we see as beautiful, but others see as eyesores? What gets us out of warm beds on cold mornings well before sunrise when we otherwise do not need to? What strange and special magic makes us study to take tests, learn an antiquated and otherwise essentially unused communication methodology, spend considerable sums of money. develop strange friendships world-wide, all-in hopes of accomplishing something that would appear to be child's play via a cell phone or the Internet?

(Cont. on Next Page)

A Year of DX (cont.)

But we do use the mails, phones, and Internet! We use them to communicate with people we first met over the air, and as tools for our pursuit of DX. Indeed, some of the best DXers in our amateur DXing community are extremely clever engineers; engineers who designed and implemented the cell phone concept. Other active DXers designed the equipment and protocols that make the Internet something taken for granted today. And these people among us, brilliant engineers, remain active DXers to this day. But of course, it is not only engineers that are DXers -far from it. As we know, DXers come from all walks of life, and you certainly need not be an engineer to be a successful DXer.

Using a cell phone or the Internet is like flying. Anyone can fly for the price of a ticket. You pay, get on the plane and it takes you there and lets you off. You flew. No fuss, no bother. No adventure.

Or you could be a pilot and fly your own plane. To do that, you need to study, and learn how to fly. You must pass tests. Being a private pilot is one of only two avocations that require a federal government issued license that is acquired by passing tests. And guess what the other one is? Right amateur radio!

Flying yourself somewhere becomes an adventure, very different indeed from sitting in row 17 in the middle seat.

In the front of the plane, you are alive; you control the plane, you see mountains, oceans, deserts. In row 17 you are asked to pull the shade for the viewing convenience of those passengers who paid for the headset to see the crummy movie. But yes, you indeed CAN use your cell phone to call Tibet - when the flight attendant tells you that use of cell phones is now permitted.

So, what then is the special magic of ham radio DXing? For active DXers, it is not about radios we do tend to love our radios, and comparing our gear with others, but our equipment, the towers and transceiver, the Yagis and the amps, are the tools we use for DXing, our portals to adventure and the world. And that is the real reason we love them.

DXing, if we will give it the chance to be, is adventure, high adventure. And how do we define "adventure"? One good definition is: "An adventure is an endeavor for which the outcome is uncertain." That is what can happen any time we turn on our rigs and start digging into the noise. We have no idea of what we are going to find.

Unlike telephones or the Internet, DXing is always an uncertain endeavor. We simply do not know what we will find when we put on the headphones. Bands may be unexpectedly dead, mediocre in one direction and better in another, or red hot in all directions. Spotting nets give hints and clues, but until we start listening for ourselves, we don't really know what we might find. The unknowing is a major part of what makes DXing an adventure.

(Cont. on Next Page)

A Year of DX (cont.)

We must give DX operating the chance to be adventure. When you turn on your rig you must at the same time open your mind to the possibilities, and not just those called out on the DX Spotting Nets. The ritual of putting on your headphones leaves behind the mundane world and its worries, and you take on a new mantle, indeed, a new persona. You become the stalker in the night, listening to the plaintive signals of a station on some island half a world away. No one knows you are listening on frequency, ready to call if you desire or not, instead deciding to move on to another frequency, another station, hunting for your prey.

Perhaps you are on Dawn Patrol, shivering in the half- light of an early winter morning, sipping at that first cup of coffee, carefully tuning the band for signals expected and unexpected, picking through them, seeking for what you know not. But you will know it when you find it!

The radio waves of the world wash over you, bringing to your ears the thoughts and words of strange and exotic places, of great cities and remote settlements. Signals reach us from valleys surrounded by mighty snow-covered mountains, from atolls in mid ocean, Asian deserts, Antarctic islands, South American jungles.

An open band offers the possibility of adventure at every kilohertz. Shamelessly, we eavesdrop on the words and thoughts of stations in contact with other stations, both stations often thousands of miles away. Much of what we overhear is mundane, even boring, talk of weather and of equipment being used, of an operator's age, of years licensed. But we hear so much more of tropical monsoons while we sit snow-bound, of starry nights while we endure rain and fog. Reports of cholera or drought, of children born, of old friends lost. The world is calling us, talking to us, if only we are there to hear it.

Anyone who has made the effort to get a license and get on the air is already something of a hero. They are doing something to improve their lives, expanding their horizons, learning new things, and making new friends. Adventure waits them and they are eager to experience it. They are enlarging their lives. Good for them - and they are us!

A major part of the magic of DX we create ourselves, using our imaginations. Consider a parallel example. You read a novel you find fascinating. You really identify with the characters; while you are reading it you live their lives, see through their eyes, think their thoughts.

Then the movie comes out. You see the film, and so often you are disappointed - the characters simply do not fit the identities you had already formed in your mind for them. The beauty of the novel is often the world your mind created for the background to the plot, a world based on a combination of your experiences, your knowledge, and your imagination. But when you then see the movie the world you imagined is lost when overrun by the movie.

(Cont. on Next Page)

A Year of DX (cont.)

A radio contact can be much the same as reading the novel. You work the station, hearing his or her signal come back to you. You come to form an image of the operator and their surroundings in your mind's eye. Perhaps it is close to reality. More likely it is not and who cares? If you never meet the operator or see a photo of same, your mental image is as good as any. And should you meet him or her, your mental images will be instantly corrected. More to the point though, you have in your mind images of where he or she lives, what the climate and terrain are like, what the economy in the station location is about etc. Very possibly you have seen pictures of the area your contact is in, or at least the parts of the country that are interesting, be they of mountains, sand dunes, trees, or pretty girls in local garb. The beautiful four color QSL cards that so many amateurs are using these days often further those impressions. QSL's don't typically show the neighborhood surrounding the local bus station. Instead, you see photos of the highlights of the area. The travel and the QSL photographs you are likely to see show the tourist highlight and the beauty of the country, not the bad parts. We DXers are radio tourists.

When you work a DX station, this is part of the adventure. Your mind is drawn to some place you did not particularly expect when you put the headphones on. I work an English station, I think of green hills, I think of London with red telephone boxes and double-decker buses. I work a Scottish station, bagpipes and shortbread cookies come to mind, not to mention fine whisky and misty hills, with a background chorus of "Flower of Scotland." I work a Norwegian, I think of icy fjords and long winters. I work an Argentinean, I think of the Andes, of gauchos and steaks, of Tierra del Fuego. Working the Antarctic Island of South Georgia is always a special treat I think of high mountains ringing a remote harbor, and the great Explorer Ernest Shackleton's grave. And then there is Easter Island ...

Adventure almost always involves a journey. But journeys, especially those to exotic places, frequently involve days or weeks of tiresome, boring travel mixed in with the adventure. Ham radio DXing gives us instant journeys to far lands.

Anytime I make an interesting contact, I make an effort to find out more about the place I worked when the contact is finished. I keep several atlases, both definitive reference works, and a smaller desk atlas that can be easily accessed during an interesting QSO, and often check look up the location of the station I worked on the map. A true adventurer, even of the armchair variety, is someone who can get a thrill looking at a map.

There are many other resources available as well that offer interesting information. For one, you can check out a call you worked on www.qrz.com. The site will usually have the name and address of the station you worked, further details of his license, perhaps his Internet address, and very possibly a picture selected and posted by the amateur in question, as well as some personal details.

(Cont. on Next Page)

A Year of DX (cont.)

A station capable of working DX then is the ultimate ticket to armchair adventure. Every time we power up the rig and slip on the headphones on we begin a new experience. You don't know where the bands will take you, or whom you will meet, and it may turn out to be nothing but a bust - or it may turn into high adventure ... I was tickled. I had just worked an ST2 station in the Sudan for a very good catch indeed for the CQ Marathon, and a native operator to boot. I walked from the shack into the kitchen to join my wife. I lifted my hand, shaped like an imaginary revolver, and blew imaginary smoke from the end of my finger, then dropped my hand to the invisible holster. My wife watched all that, and then asked, "Who did you get?"

"You are addressing Bob of Khartoum." Such is the magic of DX that we are addicted to. Here are some suggested books for DXers who, like the author, are out and out romantics. None of these works have any significant content of ham radio, but they all deal with adventure. I cannot imagine any reader finding them boring.

⇒ Wind Sand and Stars by Antoine de Saint-Exupery

⇒ Spirit of St. Louis by Charles A Lindbergh

⇒ Night Flight by Antoine de Saint-Exupery

⇒ Trustee From the Tool Room by Neville Shute

⇒ All the Pretty Horses by Cormac McCarthy

Anything by Rudyard Kipling, with an understanding that much of it is by today's standards politically incorrect, but, that said, great fascinating stuff by one of the finest writers ever to use the English language.

I would be remiss if I did not draw the reader's attention to one special endeavor designed to attract younger people to the joys of amateur radio and DXing. I refer of course to the Radio Arcala project being spearheaded by very committed Finnish DXers. Our Finnish brethren are working very hard to attract the interest of young people, exploring several approaches to capture interest. They recognize that young people would find it impossible in many cases to establish or even visit a traditional station.

So, they are studying a variety of ways to remove such entry barriers and introduce the radio experience to young people by utilizing the World Wide Web and meeting young people at their regular hangouts.

I do urge the reader to look at this at their website: http://www.radioarcala.com/ The Finns' effort on this project deserves our applause and support, not to mention increasing our own efforts to develop new younger radio amateurs.

Rejuvenating Regeneration—Clive Wallis VK6CSW

I read this article in "The Journal of the Radio Amateur Old Timers' Association" and it brought memories for me, tinkering in my basement in junior high. I hope you like it as well.

This is reprinted with the permission of David, G3ZPF, the RAOTA President. Thanks Dave!

Most radio amateurs, myself included, like to get the maximum return for the minimum outlay. Setting aside any noble and or moral argument to the contrary, there is a certain satisfaction in squeezing the maximum out of anything; there's a bit of the Scrooge in most of us, (except you, of course!).

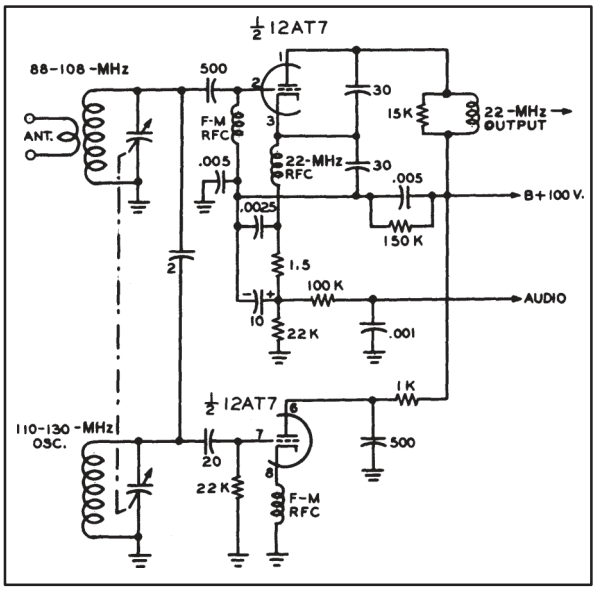


Figure 1 The Fremodyne super-regenerative superheterodyne detector for FM signals.

Edwin Howard Armstrong must have been over the moon that fateful night in 1921 when he stumbled across super-regeneration and instantly recognized its possibilities. Likewise, I was rather pleased to stumble across some information on this topic in the seventh edition of Amateur Radio Techniques and felt that it might be of particular interest to the older members of the Club, most of whom would have experimented with super- regenerative receivers in the past. In my youth (early 1950s) I played around with VHF transceivers based on super-regenerative techniques and, at one stage, even had a VHF FM receiver in my bicycle saddlebag to listen to the early experimental BBC FM broadcasts from Wrotham (pronounced Root-em!!) in Kent. The valve was a miniature B7G 6.3 volt indirectly heated type - I cannot recall the type of number - but I do remember that the bicycle's hub-dynamo powered the heater while a miniature 67.5-volt battery provided the HT. Reception while stationary was a major problem! But I digress.....

To quote from Amateur Radio Techniques: "Armstrong stumbled into super-regeneration by accident. In 1921, while setting up an ordinary regenerative receiver, he suddenly heard a signal coming through at a volume far beyond normal. He had time only to identify it as a station in the Brooklyn Naval Dock Yard, and to pull in several other stations at many times normal volume when, just as suddenly as it had all begun, the effect disappeared.

It took weeks of intensive work to pin down the principle of what Armstrong called "super- regeneration" as a new extension of the feedback principle.

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Rejuvenating Regeneration (cont.)

He demonstrated the additional amplification that is possible in a regenerative detector when the oscillatory action is interrupted (quenched) at supersonic frequencies of the order of 20 - 100 kHz. Such a detector can provide an amplification of some 100,000 times in a single stage.

"Soon super-regeneration was hailed as a 'wonder-drug' for medium wave broadcast reception, the solution to all problems, the only known means by which a simple two-stage receiver could provide full loud-speaker volume reception of weak signals. In 1922, the Radio Corporation of America (RCA), bought the patent for $200,000 and 60,000 shares. But almost immediately the increasing number of broadcasting stations brought into prominence one of the several problems that have always dogged the super-regen, its lack of selectivity and consequent inability to hold a weak signal in the presence of stronger signals. Soon the superhet (another of Armstrong's ideas, patented in 1917) drove the super- regen on to VHF, where it played a dominant role from about 1925 to 1935 and a subsidiary, but still important, role until about 1945.

"There was a revival of interest in the 'fifties' when Europe's first VHF FM broadcasting network was set up in West Germany (the super-regen copes well with wideband broadcast FM signals). Since then, it has surfaced only occasionally and little serious work has been done on improving the super-regen."

Amateurs who were active pre-war will probably recall using super-regens to receive North American and other amateur stations on 10 and 6 meters and, post-war, there was definitely some interest in the technique for four- and two-meter work. Amateur experiments into the gigahertz region were also successfully carried out at that time. Although the super-regen was capable of resolving both AM and FM signals, it did suffer from a fairly high degree of audio distortion, making it a dubious proposition where music was concerned. As well as having an ear- shattering hiss when not receiving a signal, it also radiated a strong, wide-band local signal as quenching took the circuit into and out of oscillation.

Although the super-regen offers great sensitivity, it is notoriously tricky to make it work properly. A great deal of work was done in the 'twenties' and 'thirties' to analyze its operation with the result that it was able to be mass produced in a reliable form. Early airborne IFF (Identification Friend or Foe) transponders, used in association with primary radars to determine if the target was "one of ours" or "one of theirs", had super -regen detectors working at about 30 MHz Many old- timers will also recall the short-range UHF S-phones which worked at 450 MHZ, plus a number of walkie- talkie devices used by the Allies which incorporated super-regen detectors and which ultimately found their way into ham shacks via the surplus markets. If my memory serves me correctly, many tanks were also fitted with UHF short-range super-regen transceivers as

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Rejuvenating Regeneration (cont.)

well as their normal HF comms, and some early radars, including the German "Lichtenstein", used super-regen receivers.

One notable post-war application of the super-regen was the "Fremodyne" designed in England by B D Loughlin in the 'fifties'. This simple two-valve receiver covered the FM band of 88 to 108 MHz and combined both the superhet and super-regen principles. The RF part consisted of a double triode with one triode acting as a local oscillator tuning 109.75 to 129.75 MHz When mixed with the input signal, this produced an IF of 21.75 MHz This signal was then detected by the other triode in the common envelope which acted as both mixer and super-regen detector. The audio was then fed to a second valve for power amplification.

Some of you may remember that this principle was resurrected in solid-state form in Ian Pogson's (VK2ANZ) Fremodyne, published in Electronics Australia in May 1970. This simple receiver covered 30 to 250 MHz in four bands with a super-regen detector on 27 MHz, the IF frequency. With both types of Fremodyne some radiation did occur at the IF frequency, but it was attenuated by the antenna tuning circuits, was not severe, and caused no interference on the actual signal frequency. I built Ian's design at about the time that it was published and can testify to its good performance, though the constant hiss from the detector when searching for signals was wearing. The recovered audio from the super-regen is less than hi-fi but very adequate for voice communications.

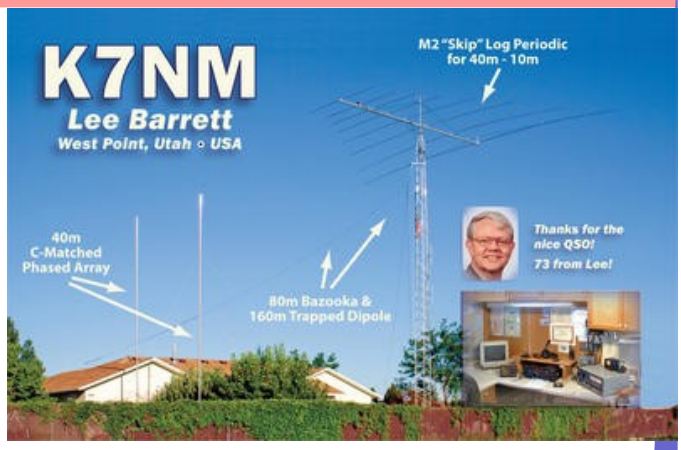
Even today the super-regen is not entirely dead. Many simple UHF remote security systems for vehicles and garage-door openers use these detectors operating at about 304 MHz Security is achieved by use of transmitted coded signals which are resolved by a decoder following detection. Only the correct combination of tones or digital data activates the appropriate operating mechanism.

Bipolar and field effect transistors can both be used to make up simple experimental regenerative receivers - there are plenty of circuits available. A tuned or untuned isolation amplifier between the detector and the antenna minimizes radiation and much fun can still be had with these devices, although if you wipe out your neighbor's TV reception don't blame me!

While Armstrong's super-regen may not have stood the test of time quite as well as his superhet principle, it has certainly been a most valuable contribution to radio communications. I hope that this article has awakened a few memories and might even give rise to a little swapping of tales on the air as well.

The VP2M Dual VEE Beam—K7NM, Lee Barrett

Thanks to Lee for submitting this. Lee can be reached at LeeJudyBarrett@Yahoo.com



Design Criteria

Dayton 2005 was a special event for me. I presented a Saturday forum on "The C-Match Method of Phasing Vertical Antennas" which was attended by my original "Elmer", Larry Comden - K3VX. I had not seen Larry in 39 years. After our reunion during the forum we joined several of Larry's associates for lunch. The conversation quickly focused on a DX-pedition to Montserrat for the 2006 ARRL CW Contest that they had been hatching over the previous several months. Before long they also had me convinced that I would a disgrace to "ham-dom" if I did not join them on this adventure. It would be tough duty – but someone had to do it! Having committed to the trip, I was immediately preoccupied with various ideas for antennas. We were to stay in a villa called Gingerbread Hill that is located on a 3 acre parcel of ground. None of us had ever been there and no pictures seemed to be available. Without this type of intelligence, one could only formulate the design criteria of a good DX antenna by retreating to the following basics:

- The antenna must cover as many bands as possible due to limited time, space and feed lines
- The antenna must exhibit a low SWR on as many bands as possible so that bands can be changed rapidly and without the losses incurred through a tuner
- The antenna needed to produce reasonable gain to overcome our transmitter's 100 Watt power disadvantage
- The antenna must be as light as possible and occupy minimal space for the trip to and from Montserrat

Selecting the Vee Beam

A number of antenna ideas were constructed over the intervening 9 months before the trip. A wire Log Periodic for 80m was constructed from the ARRL Antenna Book – which didn't work and was abandoned after two attempts.

An idea for a variable height vertical was converted to reality by the threading and tapping 5/8 inch solid aluminum rod lengths by a machinist. This system met with reasonable success using a "C-Match" tuning system[1].

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The VP2M Dual VEE Beam (cont.)

However, the great hope that this antenna would be peerless on 80 and 40 meters was crushed when the "beam strength" of the metal proved to be that of aluminum spaghetti. With extreme care, a 30 meter band vertical could be erected – but nothing taller. This antenna idea was also abandoned.

My final, successful attempt to build an antenna that would meet the listed criteria led me to the short Vee Beam. The idea of using long wires to obtain gain might be "just the ticket" – taking advantage of our 3 acre location. Figure 1 illustrates the layout of a typical short Vee Beam.

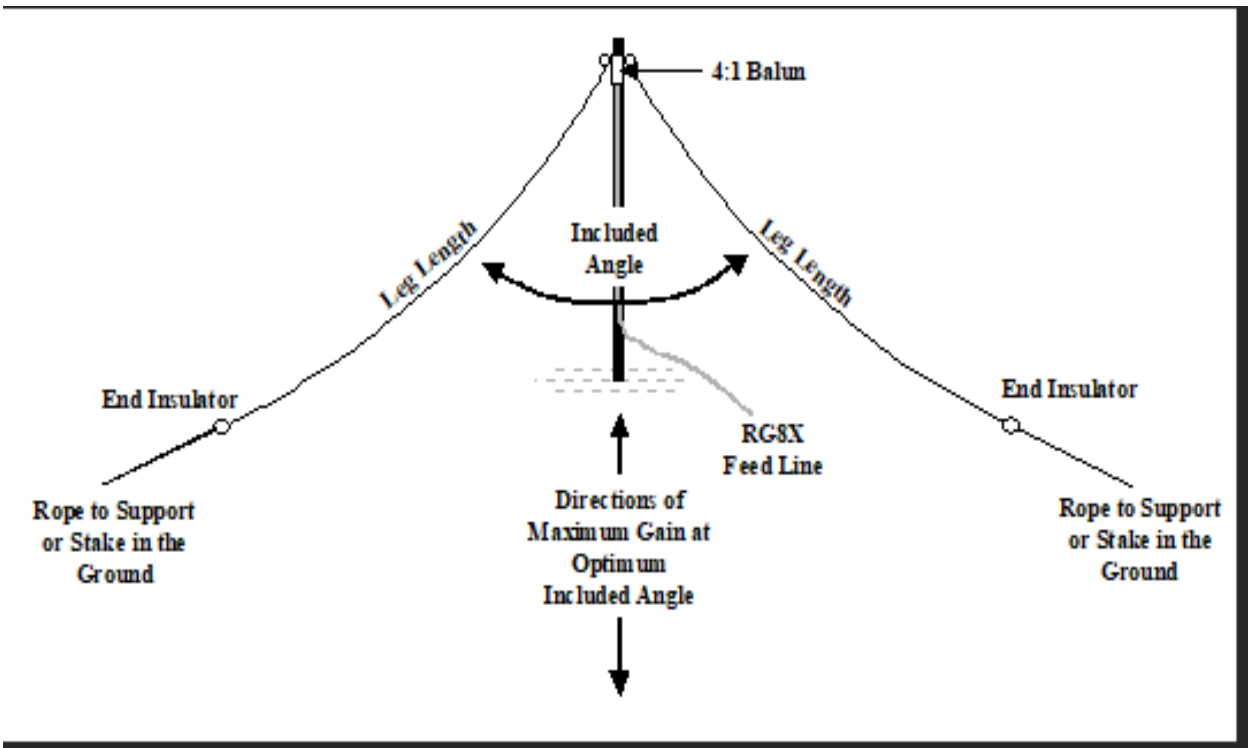

Figure 1. The layout of a short Vee Beam showing the Included Angle and the directions of maximum gain if the correct Included Angle is achieved for a given leg length.

I built a spreadsheet to calculate the physical lengths of the antennas' wire legs for each frequency band at odd multiples of a Quarter Wave (QW). My first criteria was that each antenna must have some gain so 3 QWs on each leg was the shortest length considered.

The length of the legs, in concert with the included angle of the Vee, develops gain along the bisector of the included angle. Figure 2 shows the optimum included angle for maximum gain as a function leg length. Figure 3 shows gain as a function of leg length when the antenna is installed at the optimum angle from Figure 2.

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The VP2M Dual VEE Beam (cont.)

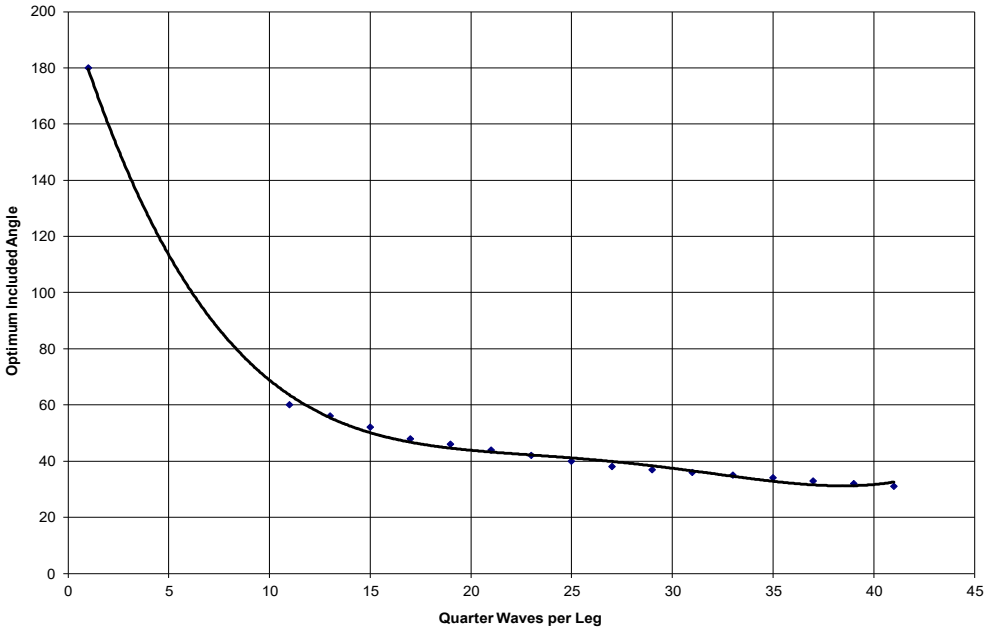

Figure 2. The optimum Included Angle for maximum Vee Beam gain

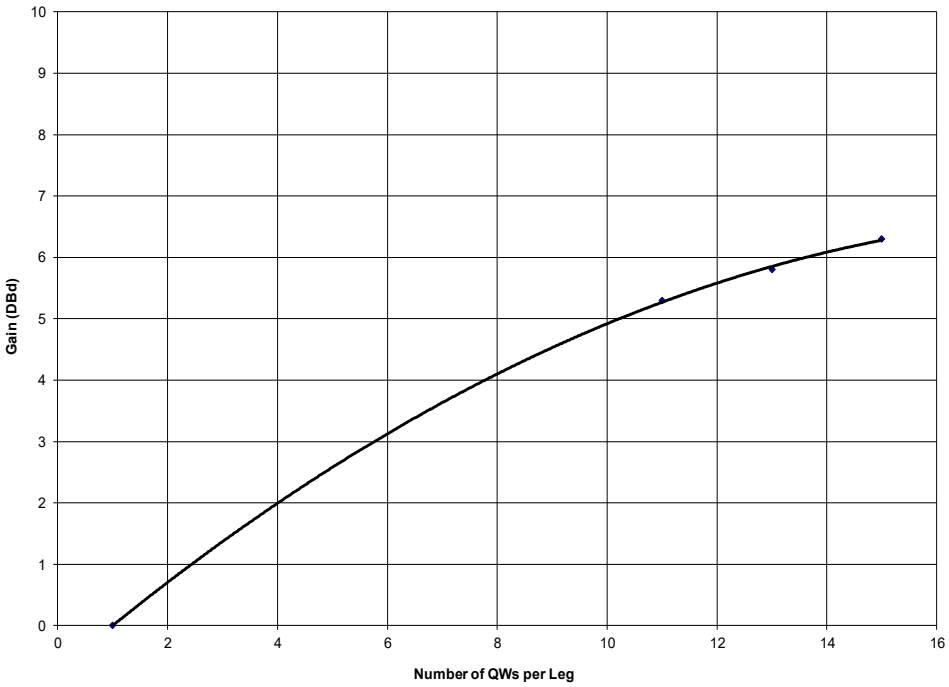

Figure 3. Vee Beam gain as a function of leg length

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The VP2M Dual VEE Beam (cont.)

In my spreadsheet I began to experiment with CW frequencies and their relationships. A match was found in the lengths for the 30, 20 and 17 meter bands. The frequencies of 10.060MHz, 14.080MHz and 18.110MHz all resulted in a common leg length of 122.3 feet (37.3 meters). This length also met the minimum 3 QW gain criteria – it is 5 QWs on 10.060MHz, 7 QWs on 14.080MHz and 9 QWs on 18.110MHz.

From Figures 2 and 3 it can be seen that the optimum angle for each of these leg lengths is quite different. I chose to use the optimum angle for the middle band to average the antenna gain performance over all three bands. At 20 meters, the optimum angle for 7 QWs is 90˚.

The physical realization of this antenna was accomplished by a trip to the Home Depot store. A 500 foot (152.4 meters) roll of AWG #14 insulated solid copper wire costs around $20 US. Couplings for ¾ inch (19.1 mm) diameter PVC sprinkler pipe were purchased for end insulators for the wire at a few cents each. To maximize the bandwidth of the antenna, a Van Gordon 4:1 balun was used to feed it at the center. The antenna was fed with 100 feet of RG8X coax. The balun and the coax (with connectors) were purchased from radio part suppliers for $45 US.

Figure 4 illustrates the layout of this short Vee Beam while it was being tuned. The center was approximately 50 feet (15.2 meters) off the ground while the ends were guyed to the ground using sufficient rope and distance to keep the leg ends approximately 12 feet (3.7 meters) high. The included angle was set at 90˚.

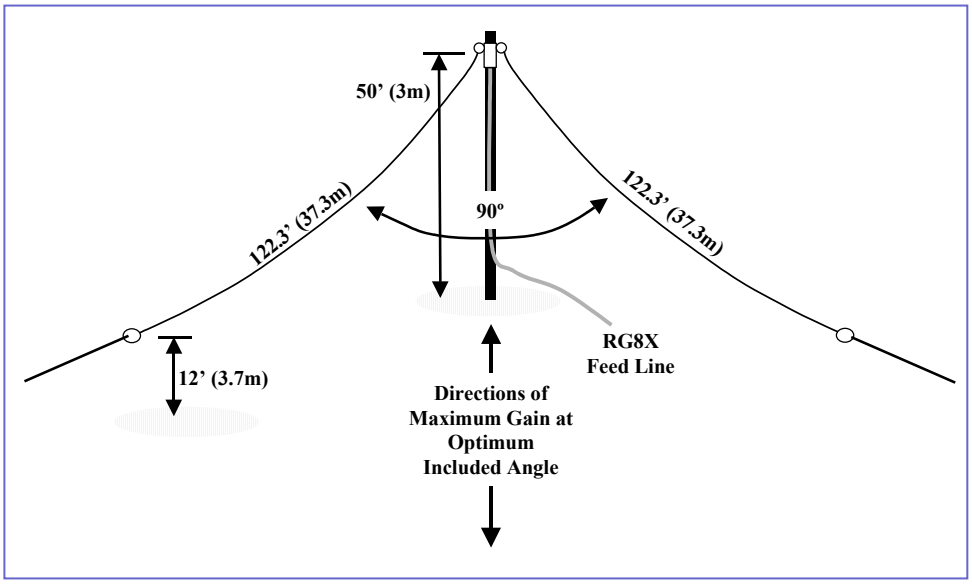

Figure 4. The first successful short Vee Beam for the 30, 20 and 17 meter bands – truly an excellent performer through several tests.

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The VP2M Dual VEE Beam (cont.)

The antenna legs were originally cut to 125 feet (38.1 meters) – longer than the calculated of 122.3 feet (37.3 meters) specified in my spreadsheet. This was so the antenna could be incrementally shortened to set the precise resonant frequencies.

I used an MFJ-259B RX bridge to tune the antenna. As expected the first measurements showed the antenna too long on each leg. The antenna was tuned by shortening each leg by 1 foot (0.3 meter) on each side at a time. The excess on each leg was wrapped back along that leg so if too much was removed the legs could be lengthened. However, no more than 1.5 foot (0.46 meter) was back wrapped at any time – the excess was cut off symmetrically from each leg. Smaller length changes than 1 foot (.3 meter) were made as resonance was approached. Care was taken to make sure both legs remained symmetric.

As expected, soon the RX bridge indicated a resonance on all three bands – and exactly where expected. The minimum VSWR measurements on each band were as follows:

10.080MHz	1.8
14.060MHz	1.5
18.100MHz	1.3

The VSWR on 30 meters was a little higher than anticipated. However, when the coax was connected to the radio the internal VSWR meter indicated 1.5. The MFJ-259B was found to consistently read a higher VSWR than that displayed by the radios used. The transmitter produced full power on all three bands without a tuner!

Since the other fellows from our Montserrat DX-pedition live across the country from me (I live north of Salt Lake City, UT and three of them live in the Pittsburgh, PA area), they were excellent test subjects and critics to evaluate this antenna's on-air performance. The first test was during the Pennsylvania QSO party. I hung the antenna in the local city park where it had been initially tuned and pointed the included angle of the Vee to the East. Amazingly, within the first half-hour of listening I found my friends on 20 meters and they reported the antenna produced an excellent, 599 signal. Further testing demonstrated that the antenna tuned the entire 20 meter band with a VSWR below 2.

With 20 meters successfully tested, I moved to 17 meters and easily made contacts across the country – again receiving excellent 599 signal reports. Again, the entire band could be used with a VSWR well below 2.

As I made the switch to 30 meters for the final test, the weather turned poor with cold wind and light rain mixed with snow. Being outdoors and wanting to keep the radio dry, my one contact on this band was kept short. It was with a Canadian station in Ontario. He reported a 579 from my 100 watts. This band yielded VSWR measurements between 1.5 and 1.9.

(Cont. on Next Page)

The VP2M Dual VEE Beam (cont.)

This Vee Beam underwent a second trial in October 2005 as part of the Boy Scout International Jamboree On The Air (JOTA) exercise. During this trial, the Vee was installed with the included angle to the Southwest. Immediately, 17 meters was a hot bed with several QSOs logged from Hong Kong, Japan and the Northwest Territory of Canada. All of our reports were S9 or better. Glenn Dixon, AC7ZN, speaks Japanese and had a couple of impressive phone QSOs into Japan with little effort. Later contacts on 20 and 30 meters confirmed that this antenna performed well – a true "killer antenna" to take to Montserrat.

The Second Generation

The success of the first Vee Beam was not repeated when a second one for 40 and 30 meters was constructed. My spreadsheet showed that a leg length of 173.1 feet (52.76 meters) would have a resonance at 7.105MHz (5 QWs) and 9.950MHz (7 QWs), respectively. When this antenna was deployed, it was found that a SWR of no less than 2.2 could be achieved on either band.

These results seemed strange so the balun was tested by connecting a 220 Ohm, non-inductive resistor across the balanced, high impedance terminals. With this 4:1 balun, the MFJ-259B connected to the low impedance port should read near 50Ω + j0Ω. To my surprise, the balun didn't do well under this test condition except between approximately 6.6MHz and 21.5MHz. Though the balun's characteristics appeared good on the 40 and 30 meter bands, there was enough of a "question mark" over the situation that two much better baluns were purchased from The Radio Works. They were similarly tested and found to be very close to 50Ω + j0Ω across the bands of interest.

Rather than rebuild the Vee Beam for 40 and 30 meters, it was decided to try a third Vee Beam for only 80 meters. Made from AWG #18 automotive wire (to keep the weight and sag minimized), this Vee Beam measured 210.6 feet (64.2 meters) on each leg with a 3 QW resonance at 3.505MHz. Much more rope and space were required to field this design! The performance was disappointing. Due to the physical size of the antenna, the wavelength and its proximity to the ground, it was not possible to obtain a VSWR less than 2.3 at resonance – even with a good balun.

It seemed at this point that the lower bands of 40, 80 and 160 meters would have to be covered by dipoles for the Montserrat expedition. These antennas would lack gain but put us on the air. I was out of ideas with the expedition only a couple of weeks away. In a final attempt to nail down a gain antenna for at least the 40 meter band, I again stared at my spreadsheet. One possibility was noted. A second Vee Beam could be constructed with 105 foot (32 meter) legs that would be 3 QWs on 40 (7.030MHz) and 9 QWs on 15 meters (21.080MHz).

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The VP2M Dual VEE Beam (cont.)

It was noted that the 122.3 feet (37.3 meters) leg length of the 30, 20 and 17 meter Vee Beam is not harmonically related to the 105 foot (32 meter) leg length for the 40 and 15 meter Vee Beam. Therefore, is should be possible to feed the two Vee Beams with the same center 4:1 balun if the ends of the individual Vee Beams were sufficiently separated. It was expected that there might be some interaction in the tuning of the two Vee Beams - but that could be accommodated. Figure 5 is a drawing of the second generation Dual Vee Beam that actually went to Montserrat.

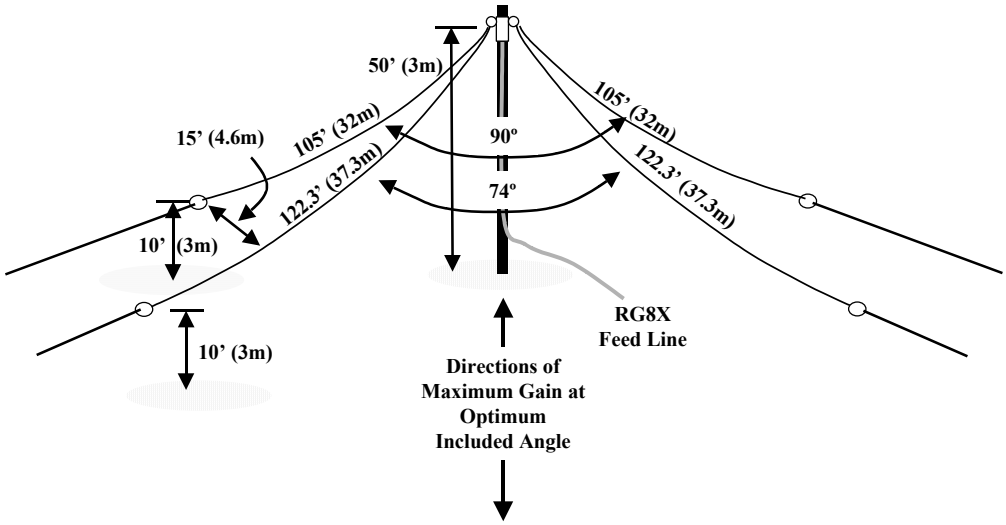

Figure 5. Two non-harmonically related Vee Beams are fed with a common 4:1 balun. This Dual Vee Beam operates on the 40, 30, 20, 17 and 15 meter bands without a tuner. It also works well on the 160, 80, 12 and 10 meter bands with a tuner.

Paul Ducharme, W7COH, helped me roll the wire out and cut it in a winter blizzard. It was hard to imagine that within weeks these antenna legs would be blowing in the 80 degree temperatures of the Caribbean. As before, the legs were cut approximately 3 feet (1 meter) longer than the calculated lengths so they could be trimmed to resonance.

A Radio Works model B4-1.5K (4:1) balun was used as the center insulator and common feed point for both Vee Beams. Another trip to a local city park was required to tune the total antenna. The center was hoisted to the 50 foot (15.2 meter) level after connecting 100 feet of RG8X to the balun. The shorter Vee was positioned with a 90˚ included angle between the legs. The 90˚ angle was a compromise of the 140˚ optimum angle for the best 40 meter gain at 3QWs and the 75˚ angle required to optimize gain on 15 meters at 9 QWs. Rope attached to each leg was used to pull out the lend insulators until they were about 10 feet (3 meters) above the ground when these ropes were tied to wooden stakes driven in the ground.

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The VP2M Dual VEE Beam (cont.)

Once the shorter Vee was in place, the longer Vee was raised inside the angle formed by the outer Vee. This longer Vee was positioned so that each wire leg passed inside the end insulator of the outer Vee with a spacing of approximately 15 feet (4.6 meters). This placed the inner Vee angle at approximately 74˚. This angle turned out to be optimum for 17 meter operation at 9 QWs. Again, lengths of rope were used to pull out the legs of the inner Vee until the insulators were 10 feet (3 meters) off the ground when the ropes were tied to wooden stakes driven into the ground.

I used the MFJ-259B to adjust the Vee lengths using the resonances of the lowest operational bands. The shorter Vee (for 40 and 15 meters) first tuned at 6.718MHz while the longer Vee (for 30, 20 and 17 meters) tuned at 9.622MHz. Both antennas were too long. The short Vee was trimmed first and the resonant frequency of the second Vee was then re-checked. Surprisingly, the shortening of the outer Vee had no effect on the inner Vee. In fact, there was no interaction between either of the Vee Beams at all!

Tuning became quick and easy. When both antennas were brought to resonance and the lowest VSWR measurements taken with the MFJ-259B resulted at the frequencies shown below:

Short Vee Beam (Outside)

7.030MHz	2.0
21.130MHz	1.3

Long Vee Beam (Inside)

10.050MHz	1.6
14.060MHz	1.5
18.112MHz	1.5

Montserrat Performance

When we arrived at Montserrat, the Dual Vee Beam antenna was installed with the center balun approximately 40 feet (12.2 meters) above the ground. This was done using a mast attached to the roof of the villa.

Due to the heavy foliage of banana trees and other tropical plants it was not possible to install this antenna with the same geometry as when it was tuned at our local park. The included angle of the outer Vee was around 85˚ and the inner Vee angle was approximately 70˚.

From the charts in Figures 2 and 3, we find that close to the optimum angles were achieved for the 20, 17 and 15 meter bands in this configuration. This should have resulted in a theoretical gain on 20 meters of 3.7dBd and gain on 17 and 15 meters of about 4.5dBd. Gain should still have been achieved on the 40 and 30 meter bands - but without the optimum angle, the direction and amount of gain were unknowns.

(Cont. on Next Page)

The VP2M Dual VEE Beam (cont.)

It was not possible to elevate the end insulators on one side of the Dual Vee Beam to more than 6 feet (1.8 meter) above the ground - due to the physical layout of the site. The other ends were fixed at about 10 feet (3 meters) above the ground using long ropes into the foliage to convenient trees. The terrain also falls away from the villa toward the ocean with a gentle but reasonable slope. This Dual Vee Beam antenna was installed preserving the best possible geometry considering the landscape. The bisector of the Vee angles was pointed to the northwest - the United States mainland – for best performance in the contest.

After installation, it was found that the VSWR measurements actually improved over those measured in the park when the antenna was tuned. Below are representative values indicated on the radio VSWR meters:

Short Vee Beam (Outside)

7.030MHz	1.3
21.130MHz	1.0

Long Vee Beam (Inside)

10.100MHz	1.6
14.060MHz	1.3
18.112MHz	1.0

Operational Results

With the first “CQ” on 17 meters with the Dual Vee Beam, we knew this was the “killer” antenna we had hoped for. The original team goal for the contest was to make at least 1000 QSOs. The final tally was 3755 QSOs and the Dual Vee Beam contributed heavily to it. Pre- and Post-contest operations yielded incredible signal reports from all compass points including Europe and the South Pacific on all bands.

These reports were somewhat surprising considering our meager 100 Watt transmitter power and that the angles of the Dual Vee Beam could not be optimized for all of the bands. But we could not argue with the success.

We also discovered another side benefit of this antenna. With the tuner in the TS -570, this antenna easily loaded on 160, 80, 12 and 10 meters thereby facilitating operations on all bands. At night, with the Montserrat S0 noise floors on 160 and 80 meters, a number of pile-ups were worked on these bands with this antenna with excellent signal reports received.

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The VP2M Dual VEE Beam (cont.)

Band conditions were not overly great during this expedition due to the low solar activity. Regardless, the Dual Vee Beam antenna functioned flawlessly. It offers five band operation with low VSWR and varying levels of gain based on frequency and geometry. With a tuner, operation on four additional bands is possible with great signals.

For the cost, ease of construction, size, weight and effectiveness, this antenna is a definite must for the DXpedition equipment list!

Special Thanks

Thanks to Aaron Barrett (KC7RJA), Spencer Barrett (KD7AEW), Judy Barrett (ex -WB7BRN), Paul Ducharme (W7COH), Glenn Dixon (AC7ZN), Larry Comden (K3VX) and a number of other non-hams (including Marlon Matturro, Doug Cox and Richard Santhon) for their assistance in building and testing these Montserrat DXepedition antennas and/or reviewing this article.

Another Look – After Several VP2M Trips

I returned with my wife to Montserrat in October 2016 and used the Vee Beam antenna again. Due to pre-negotiated YF allowable operating times, I was only on the air for six hours per day (three morning and three at night) for five days. Even so, the log was filled with over 1200 QSOs worldwide.

In December 2018, I took a team of four (including me) back to Montserrat for the ARRL 160m CW Contest. When we arrived the week before and deployed the Vee Beam, the other operators were skeptical of this big piece of wire. However, once they used it, it was a fight to get the coax back!

Attached are the EZ-NEC patterns for each of the bands. One word of caution is to notice that the elevation angle of the main lobes are quite low. There is not much going up vertically. Therefore, if you are considering this antenna for – "say" – Field Day, you will probably be disappointed. Internal US QSOs are not far enough away to the low elevation angles to be effective and only the residual field in the upper patterns are good for state-side. In layman's terms, this antenna will perform about the same as a dipole for close in contacts. It is a great DX antenna.

The last point is that "higher" is not necessarily better with this antenna. I have a friend who hung the center at 90 feet on his 100 foot tower. However, he did not elevate the ends by the same offset in height. The antenna ended up being a multi-wavelength Inverted Vee rather than a Vee Beam. The geometry must be preserved – although not extremely critical.

Notes

1. The "C-Match" refers to a matching approach for vertical antennas outlined in the book **The C-Match Method of Phasing Vertical Antennas** by Lee Barrett, K7NM. This book is available from Lee directly (see www.qrz.com – K7NM).

Interview with ZL3RIK—Rick

I have worked Rick several times and I knew that he would be an interesting person to question for our newsletter. He can be reached at zl3rik@gmail.com

AJ8B: How did you first get interested in amateur radio?
ZL3RIK: Back in the early 70's my late wife & I were avid SWL,s. We would listen on our Yaesu FRG 7000 to broadcasts from around the world. We would send our reports away to the international broadcast stations we heard & be absolutely delighted to receive a QSL card back from them. We figured out the USB/LSB toggle on the front must be Upper Society Broadcast & Lower Society Broadcast. My wife didn't think it would be appropriate to listen to LSB!! Obviously we didn't know much then. Fast forward to the 21st century. I retired & sat & passed my ham license here in Christchurch & joined the Christchurch Radio Amateur Radio Club where I am now the Vice President. My brother, ZL3PRJ passed his exam quite a number of years before me & it was he who kindled my interest in becoming a ham. Sadly he doesn't have the opportunity to be active anymore.

AJ8B: Do you have a favorite band or mode?
ZL3RIK: I cover all bands from 80M up to 70cm but my favorite bands are 40m up to 10M, SSB, FT8 & now doing CW. FT8 is a great mode. Not all operators can speak English or the operator may suffer a hearing disability so it's opened the world up to many hams in either of these situations. If I'm getting great signal reports back I'll change to SSB or CW as it means the bands are open.

AJ8B: What time of day and days do you like to operate?
ZL3RIK: Usually from around 2400z which is midday on NZ local time & if the bands are good I have been known to work till the wee small hours of the morning. For contesting I go as long as I can.

AJ8B: Any secrets to your success?
ZL3RIK: Perseverance is the key. Success is not always guaranteed. I might spend days trying for that elusive DXpedition station & even then I may miss out on getting in their log.

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ZL3RIK Interview (cont.)

AJ8B: Any tips that you can share?
ZL3RIK: Even if the bands sound dead & you hear nothing it could mean others are listening. I've called cq on an apparent dead band & it only takes one of the contacts to put you on the cluster. Within a few minutes you are at the sharp end of a pile up fielding calls from all over the globe. Oh & don't forget the split button although this does increase the bandwidth somewhat. This is where a Panadapter is an advantage.

We also have about nine or ten locals here in Christchurch who are keen DXers & we have a 2m simplex frequency we go to in order to keep each other informed about the current DX so if you get one ZL3, you'll have the strong possibility of getting more. Well before a SSB contest starts, I tune into one of the Kiwi SDR listening stations to judge my voice quality & make any minor adjustments if necessary.

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ZL3RIK Interview (cont.)

AJ8B: Describe what you are currently using:
ZL3RIK: I have a Yaesu DX 3000 which is a great contest rig. It's very menu intensive but once I had it set up it's very easy to control. I use a Heil headset with a footswitch. I also use an Ameritron AL-80B amp which can give me up to 1Kw output but on SSB I rarely exceed 600 watts & of course even less on CW.
I live on a very small section so I bought a Gap Eagle vertical antenna which covers from 40m up to 10M.The rest of my antennas are home brew. A 80/40 inverted V & a 60/30 inverted V both running approx. east/west. I have lovely neighbors as well & a couple of them helped me put up my 10 element 2M, 12 element 70cm with a 6M moxon on a rotator & they aren't even radio hams. A dear old lady across the road told me she loves watching my beams slowly rotate. She thinks I'm an avid television watcher.

AJ8B: What advice do you have for those of us trying to break pileups to work DX?
ZL3RIK: As in the DX code of conduct the secret is to listen, listen, & then listen again. Find out how the DX operator is working his pileup. If he/she is not calling you or your location remain silent. Your turn will come. Sometimes I wonder about the alligators I hear. You know the ones. All mouth & no ears. Once the operator calls CQ, tail ending is a great trick & has helped me on more than one occasion. This has also opened the way for other ZL's & even VK's to get that elusive or sought after station. Yes we do work together a lot here in “Down Under”. We sometimes have to do that to make ourselves heard!!

AJ8B: What is your favorite contest?
ZL3RIK: My favorite is the Oceana contest in both CW & SSB. This is when the big Yagi's of Europe are pointing our way so a lot of us from “Down Under” enjoy the extra DX that comes our way.

The NZART, which is the NZ equivalent of the ARRL, has numerous contests throughout the year & the Wireless Institute of Australia also run contests in conjunction with ZL. Some of these are really user friendly & are a great chance for newcomers to try their skills. A lot of the senior operators will help a newcomer when they hear them. One contest in particular doesn't have serial numbers but just how many years you have been licensed as a ham. It can't get more friendly than that. Our local club prior to covid, had a contest just for teams containing one newbie who had been licensed less than eighteen months teamed up with a senior operator at their QTH. It went for two hours on 80m & the grand prize was a chocolate fish presented at the next branch meeting.

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ZL3RIK Interview (cont.)

AJ8B: Any QSLing hints?
ZL3RIK: A QSL card is the final courtesy of a qso but it's important to use a good logging program. There are many free ones on the net. I design & print my own QSL cards & fill them in by hand. I love sending & receiving cards via the Bureau as postage is too expensive for me these days. Printing my own, means I can change/update the photo on it at will & I like to depict the different aspects of ham radio I enjoy such as SOTA, POTA etc. When the covid lockdown was on here in ZL we did what was called Back Yards On The Air (BYOTA) . I have one card that depicts my set up for that.

AJ8B: What coaching/advice would you give new amateurs?
ZL3RIK:

- Learn & adhere to the DX code of conduct.
- Be patient.
- Listen to the advice of your mentor/elmar
- Join your local club.
- Remember, we all made mistakes so don't fret over it. Some of us, including me, still make mistakes.
- Most importantly, enjoy the hobby.

AJ8B: If I were to stop by for a visit, what local place would you want us to visit?
ZL3RIK: I would recommend a trip on the train called TranzAlpine Train | The Great Journeys of New Zealand This runs 12 months of the year. (Great for you SOTA buffs as well). Speaking of SOTA, Canterbury boasts the highest SOTA summit of New Zealand, Mount Cook or ZL3/CB-001. It hasn't been activated yet!! (Hint)

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ZL3RIK Interview (cont.)

AJ8B: What local food would you want me to try?
ZL3RIK: Without a doubt it would have to be fish n chips. The VK's jokingly say that we call it fush and chups but that's just some friendly banter between our two countries. It seems to taste better straight out of its paper wrapper whilst sitting at a picnic table by the seaside in summer as you watch the waves roll in.

AJ8B: Thanks for taking the time to answer my questions. Is there anything you would like to share with us?
ZL3RIK: I love operating from an outdoor location be it from a summit, a park or beside a freshwater lake. The park & lake locations are ideal for a ham with physical impairments to hit the airwaves & I also enjoy taking a new ham as a tag along. The reward is seeing the big grin on their faces as they start to make contacts they never thought possible. I know how they feel & with the right encouragement, they will stay on as hams & eventually find their own niche in the hobby.

Rick—ZL3RIK

Question for our DX Friends

Our DX Friends were sent the following questions:

I hope that you are safe and doing well as we enter into summer in the northern hemisphere and into winter in the southern hemisphere. We are all enjoying the increase in sunspots and spending more time on the air filling in band spots.

I get so much great feedback on this section of the Newsletter. We REALLY respect and enjoy your opinions and many of our members look forward to this section over all of the others in each newsletter.

My question for you is this:

Do you need Bouvet? Will you be doing anything in preparation of this rare activation? It can be more operating time, brushing up on pileups, checking out a new antenna, etc.

.

I also sent this question to our club members. Here are their thoughts.

Yes, I need Bouvet on many bands. I have only 20M. I will check all my antennas, especially for top band and 80. Also will put long beverage for 3Y direction.

Will check PA`s, cables, switchers etc.

What can I do else?
Look for condx forecast...

Hope I will work them on many bands.

73 de Ark, UA4CC

Hello Bill,

I do not need Bouvet as I have it confirmed. I am happy with one QSL for each DXCC entity so I will not be making any special plans to work them. They should be relatively easy from here.

73 Brian 9J2BO

(Cont. on Next Page)

Question for our DX Friends (cont.)

Hi Bill,

I already have Bouvet on 20m from back in 2008 , it was a struggle due to the propagation at that time, so definitely I would be looking forward to contacts on other bands this time. I have some work to do on some of my HF antennas in preparations for the event.

As for pileups we have no problem being in them and have had many years experience, as well working various DXCC in their own pileups. That's it in a nut shell.

73
Regards Chris 9Y4D.

Howdy Bill,

Working toward the SKCC Senator award I noticed 20-meters staying open later and later, past 3:00 Z.

Over a two-week period, I've worked SKCC members in VK (twice), SV and YU, for the first time and heard (weak) JA stations for the first time in a long time on 20-meters, from 14.050-14.058, all after 3:00 Z.

Fan dipole at 30' and 75-100 watts.

As for Bouvet, I'll monitor announcements and spotting, but most likely will stumble on it, if at all, while checking propagation.

73,
Philip, K9PL

A-1 Op - FISTS #6753 - SKCC #258T - NAQCC #2227 - CWops #308 - CTC #2206 - LICWC #2236 - JA A-1 #509

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Question for our DX Friends (cont.)

No news Bill. Thanks for your work on the radio.
Vy 73 de Salvador.....C31CT.

Hello Bill
Thanks for your question. Unfortunately I have to disappoint you this time as I have no plans for anything special in connection with Bouvet.
I do need Bouvet.
If I can become active during the same time period as the expedition, I will of course listen for them and, if possible, get a QSO. I'm sure it's going to be like an anthill so; May the luck be with all of you.

Best 73 de OZ2I Henning

Hello Bill at your question :
Do you need Bouvet? Will you be doing anything in preparation of this rare activation?
No, this will be a first one for me among the five remaining dxcc. No change on the station here, just a few weeks before the dx expedition a beverage antenna in their direction hoping to contact them on 160 m and 80 m. 73 and happy holidays .
Ben
F8PDR

I need Bouvet on some bands but won't be doing anything special

W8GEX—Joe

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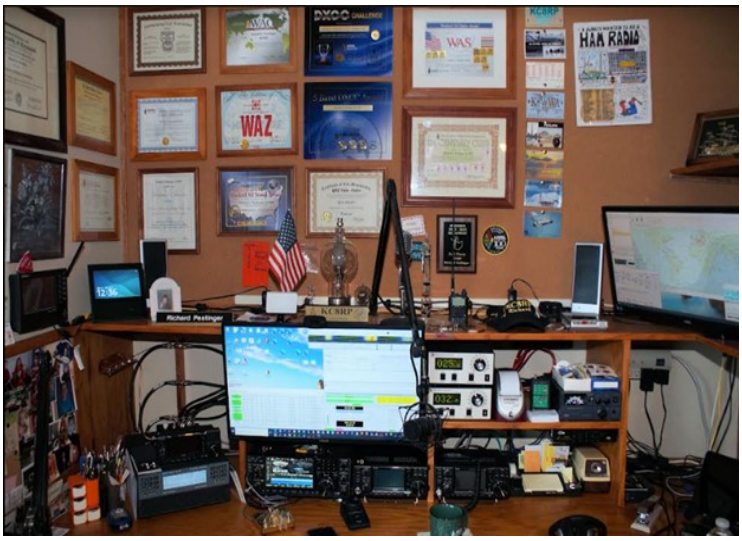
Question for our DX Friends (cont.)

Bill,

I am getting ready for Bouvet, it is an ATNO for me. I have all my main antennas and rotators checked and will continue doing so throughout the year.

I have attached a picture of my new shack which has an IC7610, 7300, 9700, 705 and recently an ID-52a, I'm all Icom. I also attached a picture of my backyard and antennas.
I have WAZ, WAC, 8 band DXCC, WAS, DXCC 320 and 1500 Challenge.

73
Richard, kc8rp



I have purchased a K4KIO Hex beam and hope to have it up at 50 feet by the time the 4th of July rolls around. I am also putting up a 60M dipole to cover as many bands as I can. Finally, I am replacing the finals in my amplifier after 9 years.

All of this for Bouvet? Kind of, but also because I needed to do it!

73

Bill AJ8B

Pioneers of Physics, Mathematics, and Electronics

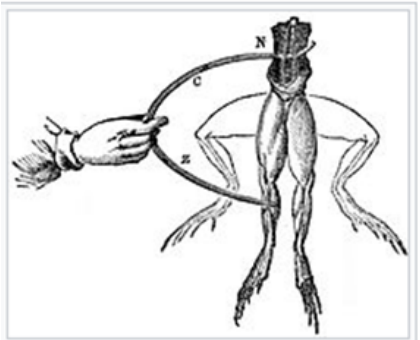
We are continuing our historical series by checking up on Luigi Galvani, 1737 - 1798 . I hope you are finding this interesting.

Luigi Galvani

Portrait of Galvani at the Palazzo Poggi

Luigi Galvani was born to Domenico and Barbara Caterina Foschi, in Bologna, then part of the Papal States. Domenico was a goldsmith and Barbara was his fourth wife. His family was not aristocratic, but they could afford to send at least one of their sons to study at a university. At first, Galvani wished to enter the church, so he joined a religious order, the Oratory of Saint Philip Neri, at 15 years old. He planned to take religious vows, but his parents persuaded him not to do so.

Around 1755, Galvani entered the Faculty of the Arts of the University of Bologna. Galvani attended the medicine course, which lasted four years, and was characterized by its "bookish" teaching. Texts that dominated this course were by Hippocrates, Galen, and Avicenna. Volta, a professor of experimental physics in the University of Pavia, was among the first scientists who repeated and checked Galvani's experiments. At first, he embraced animal electricity. However, he started to doubt that the conductions were caused by specific electricity intrinsic to the animal's legs or other body parts. Volta believed that the contractions depended on the metal cable Galvani used to connect the nerves and muscles in his experiments.



Electrodes touch a frog, and the legs twitch into the upward position[8]

Volta's investigations led shortly to the invention of an early battery. Galvani believed that the animal electricity came from the muscle in its pelvis. Volta, in opposition, reasoned that the animal electricity was rather a metallic electricity caused by the interactions between the two metals involved in the experiment.

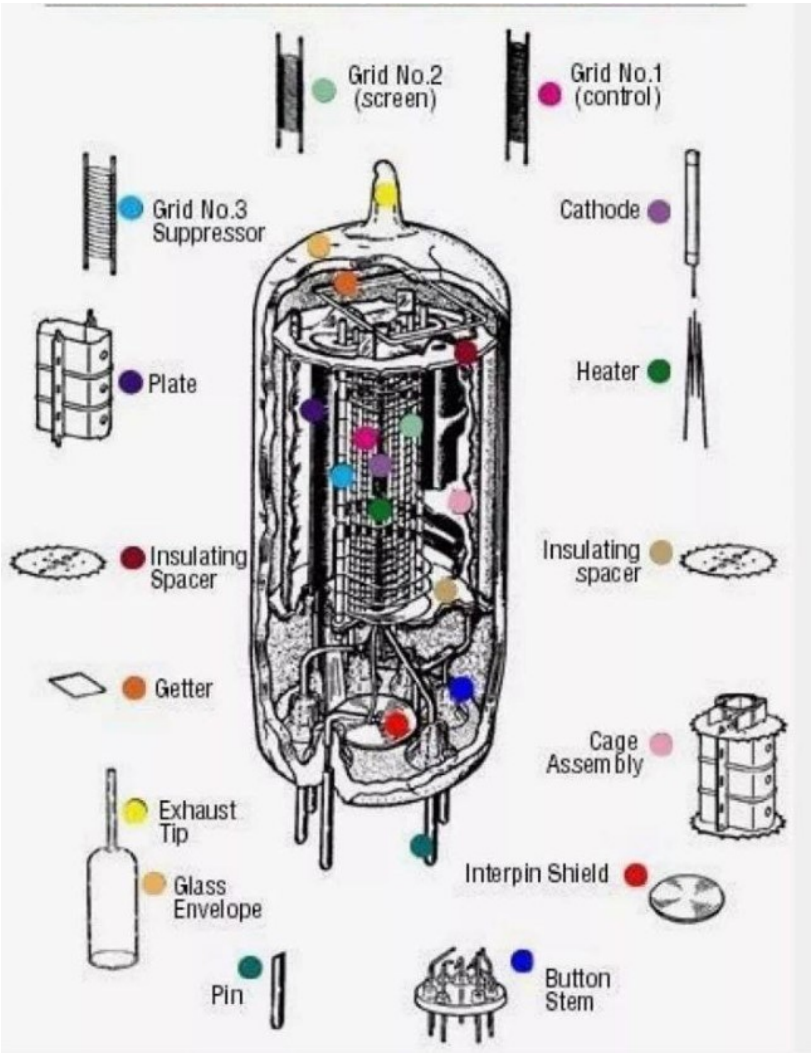
Every cell has a cell potential; biological electricity has the same chemical underpinnings as the current between electrochemical cells, and thus can be duplicated outside the body. Volta's intuition was correct. Volta, essentially, objected to Galvani's conclusions about "animal electric fluid", but the two scientists disagreed respectfully, and Volta coined the term "Galvanism" for a direct current of electricity produced by chemical action. Thus, owing to an argument between the two regarding the source or cause of the electricity, Volta built the first battery in order to specifically disprove his associate's theory. Volta's "pile" became known therefore as a voltaic pile.

(Cont. on Next Page)

Pioneers of Physics, Mathematics, and Electronics (cont.)

After the controversy with Volta, Galvani kept a low profile partly because of his attitude towards the controversy, and partly because his health and spirits had declined, especially after the death of his wife, Lucia, in 1790.

Since Galvani was reluctant to intervene in the controversy with Volta, he trusted his nephew, Giovanni Aldini, to act as the main defender of the theory of animal electricity.



Anyone remember the pentode?

A Duo-Band 6M & 2M Antenna

By Carl Luetzelschwab, K9LA

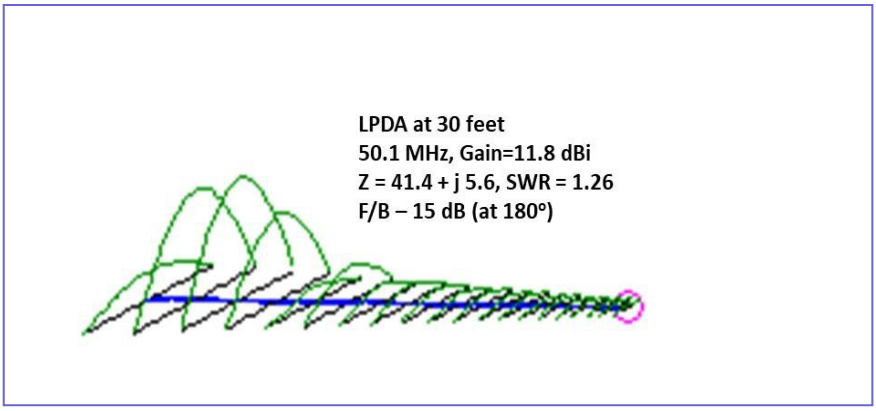
This article is from Carl's website, www.k9la.us. Carl is a prodigious writer and a frequent contributor to our newsletter. This is printed here with his permission. Thanks Carl!

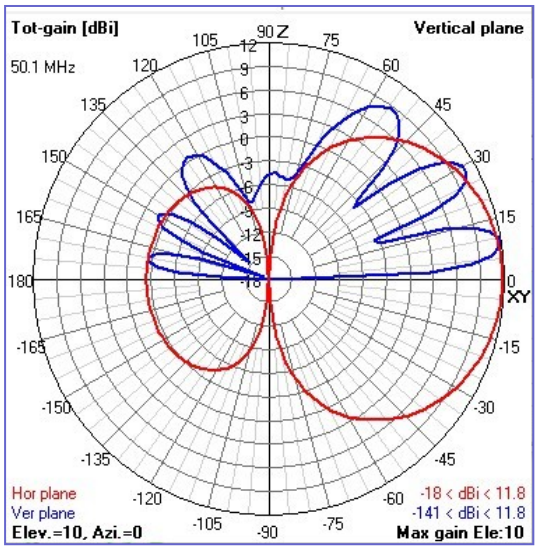
This month's column is another one about antennas. They are important, as they are the interface between our rig and the ionosphere. Hopefully this column will give others ideas on how to address a duo-band antenna for 6m and 2m.

It all started with a discussion with a local ham here in Ft. Wayne. He wanted to expand his VHF capabilities with gain antennas for 6m and 2m. One restriction he put on the design was to have only one coax to feed a duo-band design.

LPDA Design

The first design we looked at was a log periodic dipole array (LPDA for short) that covered 50 MHz through 150 MHz [note 1]. The design used 20 elements on a 7-foot boom. Here are the magnitudes of the currents on each of the twenty elements, and the azimuth (red) and elevation (blue) patterns at 50.1 MHz when the antenna is mounted at 30 feet over average ground (σ = .005 S/m, εr = 13).





The gain on 6m is 11.8 dBi, which translates to about 5 dB over a 6m dipole at the same height. Note that the active region of this LPDA at 50.1 MHz (based on the currents) is for all intents and purposes element 1 (the longest element) through element 7. Now let's look at this design at 144.2 MHz.

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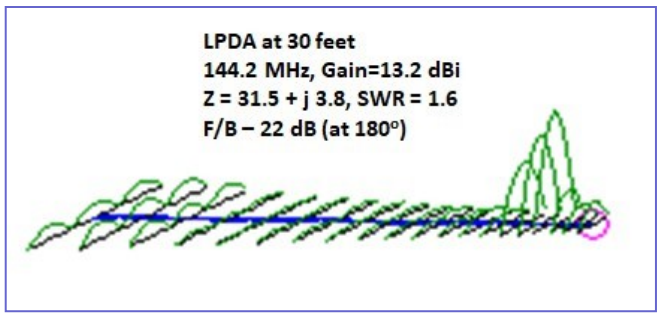
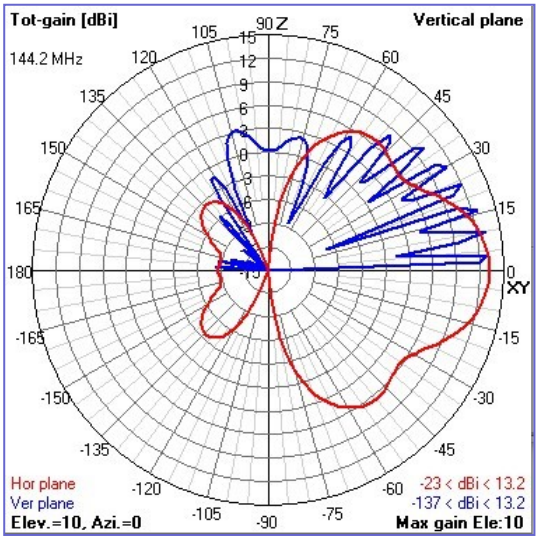
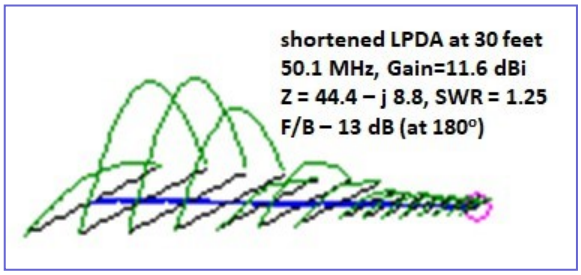
A Duo-Band 6M & 2M Antenna (cont.)

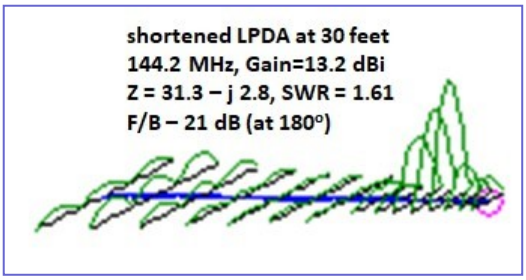


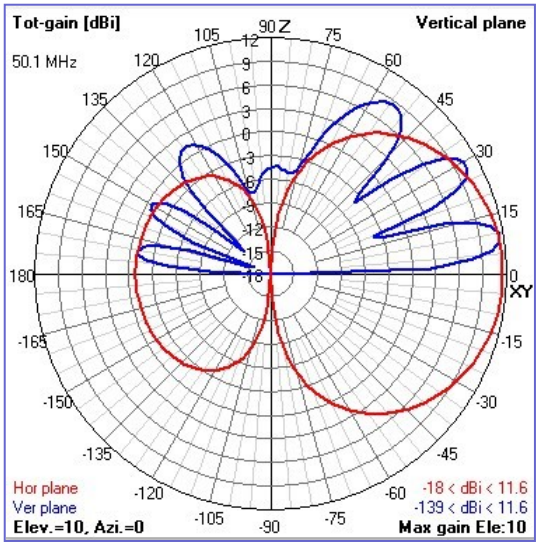


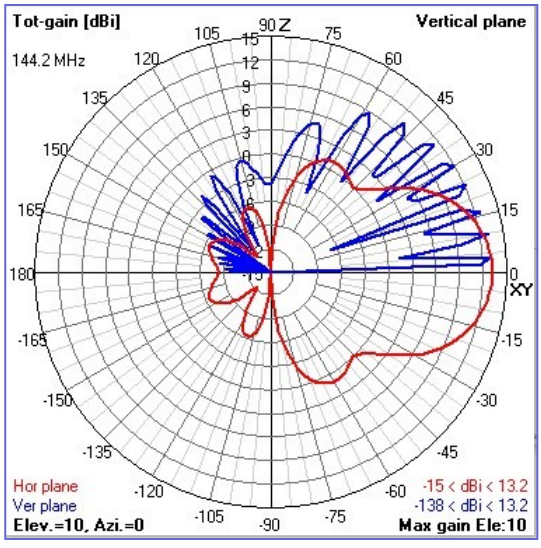
The gain on 2m is 13.2 dBi, which translates to about 6 dB over a 6m dipole at the same height. Note that the active region of this LPDA at 144.2 MHz (based on the currents) is for all intents and purposes element 13 through element 20 (the shortest element).

The two active regions tell us that the middle elements (8 through 12) are not doing anything for 6m and 2m operation – they're just taking up space on the boom. So why not get rid of them and shorten the boom? Here are the magnitudes of the currents on the new shorter-boom LPDA (the boom is now 5.3 feet) on 6m and 2m, and the azimuth and elevation patterns on 6m and 2m.









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A Duo-Band 6M & 2M Antenna (cont.)

Here's a tabular summary of performance of the original LPDA design compared to the shortened-boom LPDA design.

config	freq MHz	gain dBi	Z ohms	SWR	F/B dB
original LPDA	50.1	11.8	41.4 + j 5.62	1.25	15
shortened-boom LPDA	50.1	11.6	44.4 - j 8.8	1.25	13
original LPDA	144.2	13.2	31.5 + j 3.8	1.6	22
shortened-boom LPDA	144.2	13.2	31.3 + j 2.8	1.61	21

Although there are details to work out, this cursory investigation suggests that the shortened- boom LPDA is a feasible solution for a duo-band 6m and 2m antenna with one coax feed.

Coupled-Resonator Design

We next looked at a coupled-resonator design. In this design, a 6m dipole is fed, and a 2m dipole is placed very close to the 6m dipole (but not connected to the feed coax) so that two resonances occur – one in the 6m band and one in the 2m band [note 2].

Using 4nec2 (from Arie Voors), the driven element for 6m is 110.544 inches long (split in the middle to feed it) using a 0.125 inch radius tube. The element for 2m is 39.79584 inches long (not split in the middle) using a 0.125 inch radius tube. The spacing between the two elements is 0.6 inches center-to-center.

The SWR at 50.1 MHz is 1.45:1 when these two elements are 30 feet above average ground. The SWR at 144.2 MHz is 1.68:1.

The next step would be to add a parasitic reflector and parasitic directors for each band. To maintain impedances on 6m and 2m near 50 ohms, the design of each Yagi needs to result in a feed impedance of 50 ohms – and not the usual lower impedances typical of many Yagis.

This is as far as we carried this approach. It appears to be a feasible solution for a duo-band 6m and 2m antenna with one coax feed.

Two Yagis on the Same Boom

It would be simple to implement a Yagi for 6m and a Yagi for 2m on the same boom. The issue is how do you just use one coax to feed both antennas?

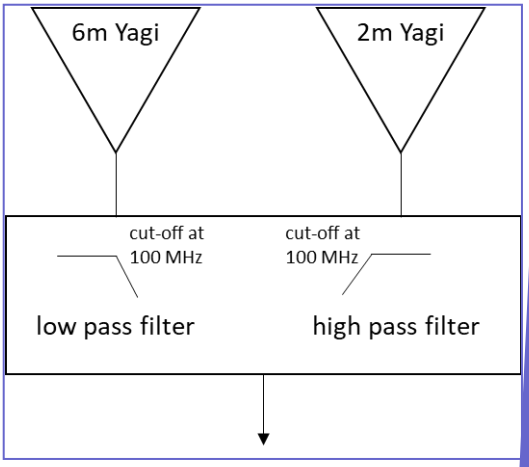
One way would be to use a remote switch at the antenna to select the band. Another way would be to use properly-designed filters per the sketch on the next page:

(Cont. on Next Page)

A Duo-Band 6M & 2M Antenna (cont.)

In addition to the basic low-pass and high-pass functions, each filter must present a high impedance to the other frequency [note 3].

So here is yet another feasible solution for a duo-band 6m and 2m antenna with one coax feed.



Interlaced Quad

Knowing that tri-band quads (20m, 15m and 10m) can be fed with one coax, can this be done with a 2m quad inside a 6m quad? It's something we didn't look at in detail, but experience at HF says it seems to work if the two feed points can be located close to each other (by bringing the feed point of the lower horizontal wires of the lower-frequency quad up to the feed point of the lower horizontal wires of the higher-frequency quad).

An analysis of a 17m and 12m quad and how to feed it with one coax is discussed in the article "A 2 Element Quad for 17 and 12 Meters Using a Combined Feed" by Cebik W4RNL (SK) and Cerreto WA1FXT in The ARRL Antenna Compendium Volume 8. Techniques used in this article may be applicable to a 6m/2m quad.

Of course a remote antenna switch or filters would work here, too.

Summary

I've covered four ways to make a duo-band 6m/2m antenna with one coax feed. There are probably more ways to do this. I'd love to hear about them – you can e-mail me at k9la@arrl.net.

Notes

1) The design uses a single boom, with crossed transmission lines between each element. The other way to feed an LPDA is to use two booms and alternate the element halves on the twobooms. This latter method is how my Tennadyne T6 LPDA (14-30 MHz) is fed.

2) This technique is used in several commercial antenna designs.

3) See "SO2R With A Single Tri-Bander" by Luetzelschwab, K9LA, in the September/October 2009 issue of NCJ (the National Contest Journal).

SouthWest Ohio DX Association (SWODXA)
Club Fact Sheet

Who We Are: *SWODXA* is comprised of active DX'ers and contesters with a deep passion for all aspects of Amateur Radio. We welcome everyone who is interested in joining our club to please contact us. *SWODXA* members are active in all facets of DX and Contesting. We also travel to, and fund various DXpeditions all over the world. *SWODXA* sponsors the annual DX Dinner held on the Friday evening of Hamvention weekend in Dayton, Ohio. In addition, *SWODXA* members moderate the Hamvention DX Forum and host the *W8DXCC DX Convention*. *SWODXA* is proud sponsor of the prestigious *DXPedition of the Year Award*.

DX Donation Policy: The policy supports major DXPeditions that meet our requirements for financial sponsorship. Details are available on the website at: https://www.swodxa.org/dxgrant-application/ and elsewhere in this newsletter

Club History: The Southwest Ohio DX Association (SWODXA) is one of the country's premier amateur radio clubs. Though loosely formed in mid-1977, the club had its first formal organizational meeting in August of 1981 where Frank Schwob, W8OK (sk), was elected our first President. While organized primarily as a DX club, SWODXA members are active in all aspects of our hobby.

Requirements for Membership: We welcome all hams who have an interest in DXing. It doesn't matter whether you're a newcomer, or an old-timer to DXing; everyone is welcome! Visit http://swodxa.org/member.htm

Meetings: The club meets on the second Thursday of each month at Hunter Pizzeria in Franklin, OH, and virtually via ZOOM. Members gather early in the private room for dinner and then a short business agenda at 6:30 PM, followed by a program. If you enjoy a night out on the town with friends, you'll enjoy this get together. Meeting attendance is NOT a requirement for membership.

Club Officers: Four presiding officers and the past president (or past VP) make up the Board of Directors The current roster of officers are: President Bill Salyers, NR8Z; Vice President Kevin Jones, W8KJ; Secretary Mindi Jones, KC8CKW, and Treasurer Mike Suhar, W8RKO.

Website: We maintain websites at www.swodxa.org and www.swodxaevents.org managed by Bill, AJ8B. These sites provide information about a variety of subjects related to the club and DXing.

SouthWest Ohio DX Association (SWODXA) DX Donation Policy

The mission of SWODXA is to support DXing and major DXpeditions by providing funding. A funding request from the organizers of a planned DXPedition should be directed to the DX committee by filling out an online funding request. (https://www.swodxa.org/dx-grant-application/)

The DX Grant committee will determine how well the DXPedition plans meet key considerations (see below). If the DX Grant committee recommends supporting the DXPedition in question, a recommended funding amount is determined based on the criteria below. The chairman of the committee will make a recommendation at the general meeting on the donation.

Factors Affecting a DXPedition Funding Request Approval

DXPedition destination	Website with logos of club
Ranking on the Clublog Most Wanted Survey	QSLs with logos of club sponsors
Online logs and pilot stations	Logistics and transportation costs
Number of operators and their cre-	Number of stations on the air
LoTW log submissions	Bands, modes and duration of operation

H40GC	H44GC	ZL9HR	XX9D	HK0NA	FT4TA
KH1/KH7Z	EP2A	FT5ZM	C21GC	VK9WA	NH8S
K4M	CY9C	VK9MA	PT0S	FT4JA	YJ0X
6O6O	VP6D	TO4E	XR0ZR	VP8STI	VP8SGI
W1AW/KH8	K1N	3D2C	VK0EK	S21ZBB	E30FB
ST0RY	TI9/3Z9DX	VK9MT	K5P	9U4M	TX3X
VU7AB	3Y0Z	3C0L	TX7EU	CE0Z	3C1L
TI9A	3D2CR	3B7A	K9W	VU7RI	6O7O
C21WW	CE0Z	T30GC	T30L	D68CCC	W8KKF/WP5
K5D	3Y0J	T33A	3Y0J	CY9C	