



THE SIGNAL



Newsletter of
the Bella Vista Radio Club

VOL. 2, NO. 9 DECEMBER 2019

Monthly Meetings: 1st Thursdays @ 7 p.m., Highland Christian Church, 1500 Forest Hills Blvd, Bella Vista
Club Call: N5BVA • Repeater: 147.255 +offset, pl 162.2 • Website: www.bellavistaradioclub.org

WEEKLY NETS:

3820 kHz Roundtable - Sundays @ 4 pm

147.255 Repeater Net - Wednesdays @ 8 pm

Wide Area Net - Wednesdays @ 9 pm on the N5UFO NWA Linked Repeater System

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B V R C OFFICERS:

President

Glenn Kilpatrick – WB5L

Vice – President

Chris Deibler – KG5SZQ

Secretary

Wayne Patton – K5UNX

Treasurer

Marc Whittlesey – WØKYZ

Technical Officer

Steve Werner – K5SAW

Repeater / Club Call Trustee

Fred Lemley – K5QBX**APPOINTED POSITIONS:**

Public Information Officer

Membership Coordinator

Ron Evans – K5XK

Emergency Communications

Paul Blomgren – KC7DQY

HAM 101 Chairman

Gregg Doty – N5RGD

V E Testing

Don Cooper – KC7DC

2-Meter Net Coordinator

Chris Deibler – KG5SZQ

Newsletter Editor

Don Banta – K5DB**NEXT BVRC MONTHLY MEETING****THURSDAY - DECEMBER 5, 2019 - 7 PM****HIGHLAND CHRISTIAN CHURCH****1500 FOREST HILLS BLVD.****BELLA VISTA, AR****DECEMBER PROGRAM:****Annual
Christmas
Banquet**

Be sure and mark your calendar for BVRC's annual Christmas banquet. New BVRC officer elections will also be held at the December meeting. In addition, ARRL Delta Division Director David Norris – K5UZ will be on hand with a great presentation! This meeting always puts a great finishing touch to all the accomplishments of the club in the previous year, and never disappoints. See you then!!!

Multiband 80-10m end fed half wave antenna

EFHW ANTENNA FEATURED AT BVRC NOVEMBER MEETING

110 μ H coil

Matching Unit



Around 45 members attended a super program on HF antennas – and featuring the EFHW dipole (End Fed Half-Wave), as presented by Steve Ellington – N4LQ. Steve appeared via Skype, and many kudos go to Steve Werner – K5SAW for the excellent video set-up that brought the program to us. Steve Ellington was first licensed in 1963 when he obtained his Novice license and was issued the callsign WN4TPD. He then passed his General in 1964, and later upgraded to Extra. Steve began his presentation speaking on many different types of antennas – the trap dipole, Carolina Windom, horizontal loop, delta loop, ladder line, etc.

Steve then migrated to his favorite antenna of late, the end fed half-wave dipole. He stated that the antenna must be a half-wavelength long on the lowest band. It can be configured horizontally, vertically, as an inverted-L, and many other ways. It can be fed with $\frac{1}{4}$ wavelength ladder line for single-band use, or a broadband high impedance transformer for multi-band use. For those unable to attend, Steve's fine program can be found for viewing on the BVRC website. We really appreciate Steve taking his time to present a fine program to the Club.

FROM THE DESK OF THE PRESIDENT



Let me begin by wishing you a very happy upcoming holiday season marked by good health and humor, as well as some inspiring ideas. Let's all be thankful for the great blessings bestowed upon us, and the opportunity to make a difference in so many people. I know it sounds corny, but it really does seem amazing that it is time to write my last message to you as President of our Bella Vista Radio Club.

Hopefully, you have a sense this year that the Club has taken some important strides and that it is better positioned to serve the Northwest Arkansas community. I sure have that sense having watched the progress. I started off my term as President by refocusing on our mission and vision to make sure that, as we grow, we do not lose sight of what our Club is all about – promoting, assisting, teaching, staying active, and serving the community. I think that if an opportunity presents itself and it scares you, it is a good thing. Imagine how boring our daily lives would be if we kept doing the same thing and didn't have the chance to grow? If I slow down and look back, I am proud of how far I have come. For me, this was completely outside my comfort zone, and I am glad I took that step. Thank you for letting me check so many things off my bucket list this year (including working the ARQP on CW!!).

I have had the opportunity to interact and work with an outstanding team of individuals who are dedicated to the Club, keep it running smoothly, and allow it to flourish. We are fortunate to have Ron Evans' help with all the public announcements and meeting presentation

support. Marc Whittlesey as a dedicated Treasurer, Chris Diebler as Vice President, Wayne Patton as Secretary and all the other board members and appointed chairpersons. There are too many to list here, but nevertheless a great team of hams. After hours of debates, conversations, and laughter I consider them not only my peers but my friends.

When looking for my inspiration for this final message, I went back to the first message I wrote so long ago. My focus for this past year was on the partnerships we build within the amateur radio hobby, and I feel that this year has built some great relationships. Our successes (on so many levels) are dependent on our partnerships, whether it is between the ARRL, committee members, or a sister club in the area. Alone, none of these things would thrive, but when they are put together in the right combination they can truly flourish. We have done well, and I see even more growth in the future.

So as I wrap up my term as President, I am grateful and honored to have been entrusted with leadership of the Bella Vista Radio Club over the last year. Our successful year was accomplished through teamwork. Under the new leadership, I am confident we will continue to successfully advance our beloved Club as well as the whole hobby in general. Along with the help of our great members, our team will continue to make sure that our Club continues to be the ultimate “go to” resource for the Northwest Arkansas region, and beyond.

And now my friends, I come to the end where I must express my gratitude to all of you for allowing me this opportunity to serve. I love the Bella Vista Radio Club and it has been a very high privilege to serve you in this office. Thank you all for giving me that opportunity, and for making this a wonderful and memorable year.

In closing, I would like to underscore the importance of being involved in the “biggest and best club in the region”. Yes, I said it! The needs of our members, especially those who are just starting with the “greatest hobby in the world” are vulnerable. We have seasoned members that have vast expertise and experience, and have a great deal to offer to improve the quality of Ham Radio for current and future generations. Membership within the club also affords opportunities to collaborate with a community of colleagues who share common goals and interests as well as opportunities for mentorship for those who are starting out in their “lifetime hobby”. I have had the distinct pleasure of leading the incredible board of the Bella Vista Radio Club for the past two years. I feel so privileged to have the opportunity to be a part of such a great club. Thank you again to all of you for this exciting year!

Glenn Kilpatrick – WB5L

BVRC MEMBERS' CORNER

From
**MEMBERSHIP
COORDINATOR**
Ron Evans - K5XK



KØSNG – Former BVRC member / longtime president Bob Femrite has been checking into the 3820 Roundtable from his QTH near Belton, TX. Bob now has his **Hexbeam** back in the air, with a new radio shack & metal working shop.

K5XH – Mark's current project is refurbishing a large **Hy-Gain TH7** triband yagi.

WQ5T – OM Jay (W5JAY) reports that Kathy has passed 102 countries for her DX Century Club totals, only waiting for contact confirmations to apply for her **coveted DXCC award**.

KI5DUV/KI5EQL – Bonner & Faith have upgraded their home station on Posey Mountain to include a new TRAM dual band vertical, enabling them to reach both the BVRC 2 Meter and VHF/UHF Wide Area Nets, on Wednesday evenings.

K5QBX – when last heard, Fred was operating HF portable in grid locator 'EM-06,' far NW Oklahoma, looking for NWA contacts.

K5DVT – Despite a busy first semester in pre-engineering at U of A, Jon found time to repair his Ten-Tec OMNI D transceiver, and is again participating in the 3820 Roundtable, Sundays at 16:00, local.

K5DB – Along with his contesting and DXing, Don is now pursuing the Triple Play Award, which constitutes working all 50 states on three different modes of operation. He has WAS on SSB and FT8, and only 6 states to go on CW.

WB5L – We are anxious to see our hard-working, outgoing Club president for the past two years, Glenn, receive the prestigious ARRL Delta Division 'Ham of the Year' award at our December 5th meeting!

As we go to press, at least 16 BVRC members have signed-up for the upcoming 52nd annual conference of the Arkansas DX Association on Saturday, Dec 7th, in Springdale. More info at www.adxa.org !

In Memoriam



Bob McIntire AC5LX

It is with great sadness that we report our dear friend Bob McIntire – AC5LX is now a Silent Key. Word came from his XYL, Jimmi, saying that Bob passed away peacefully Monday night, Nov. 18. He had been in hospice care at Circle of Life in Bentonville after a recent stroke. Bob was an avid and longtime member of BVRC, regularly checking into our weekly 2-meter Net and the Sunday 3820 Roundtable gatherings. He was also a regular and well-known in several other HF nets. Bob was also a veteran, and active in both American Legion and the VFW. Many were unaware that he was also a volunteer chaplain, serving weekly with Jimmi at Mercy Hospital in Rogers. His 90th birthday would have been December 21st.



A HAM OPERATOR'S CHRISTMAS

'Twas the night before Christmas
And all through two meters,
Not a signal was keying up
Any repeaters.

The antennas reached up
From the tower, quite high,
To catch the weak signals
That bounced from the sky.

The little Tech children,
Took their HTs to bed,
And dreamed of the day
They'd be Extras, instead.

Mom put on her headphones,
I plugged in the key,
And we tuned 40 meters
For that rare ZK3.

When the meter was pegged
by a signal with power.
It smoked a small diode,
and, I swear, shook the tower!

Mom yanked off her phones,
And with all she could muster
Logged a spot of the signal
On the DX Packet Cluster.

While I ran to the window
And peered at the sky,
To see what could generate
RF that high.

It was way in the distance,
But the moon made it gleam -
A flying sleigh, with an
Eight element beam!

And a little old driver
with his whip and a flick.
"Holy QRZ-ed", I shouted,
"It's really Saint Nick!"

Oh yes, it was Santa
The Santa of Hams.
On a mission, this Christmas
To clean up the bands.

He circled the tower,
Then stopped in his track,
And he slid down the coax
Right into the shack.

While Mom and I hid
Behind stacks of CQ,
This Santa of hamming
Knew just what to do.

He cleared off the shack desk
Of paper and parts,
And filled out all my late QSLs
For a start.

He ran copper braid,
Took a steel rod and pounded
It into the earth, till
The station was grounded.

He tightened loose fittings,
Re-soldered connections,
Cranked down modulation,
Installed lightning protection.

He neutralized tubes
In my linear amp...
(Never worked right before --
Now it works like a champ).

A new, lowpass filter
Cleaned up the TV,

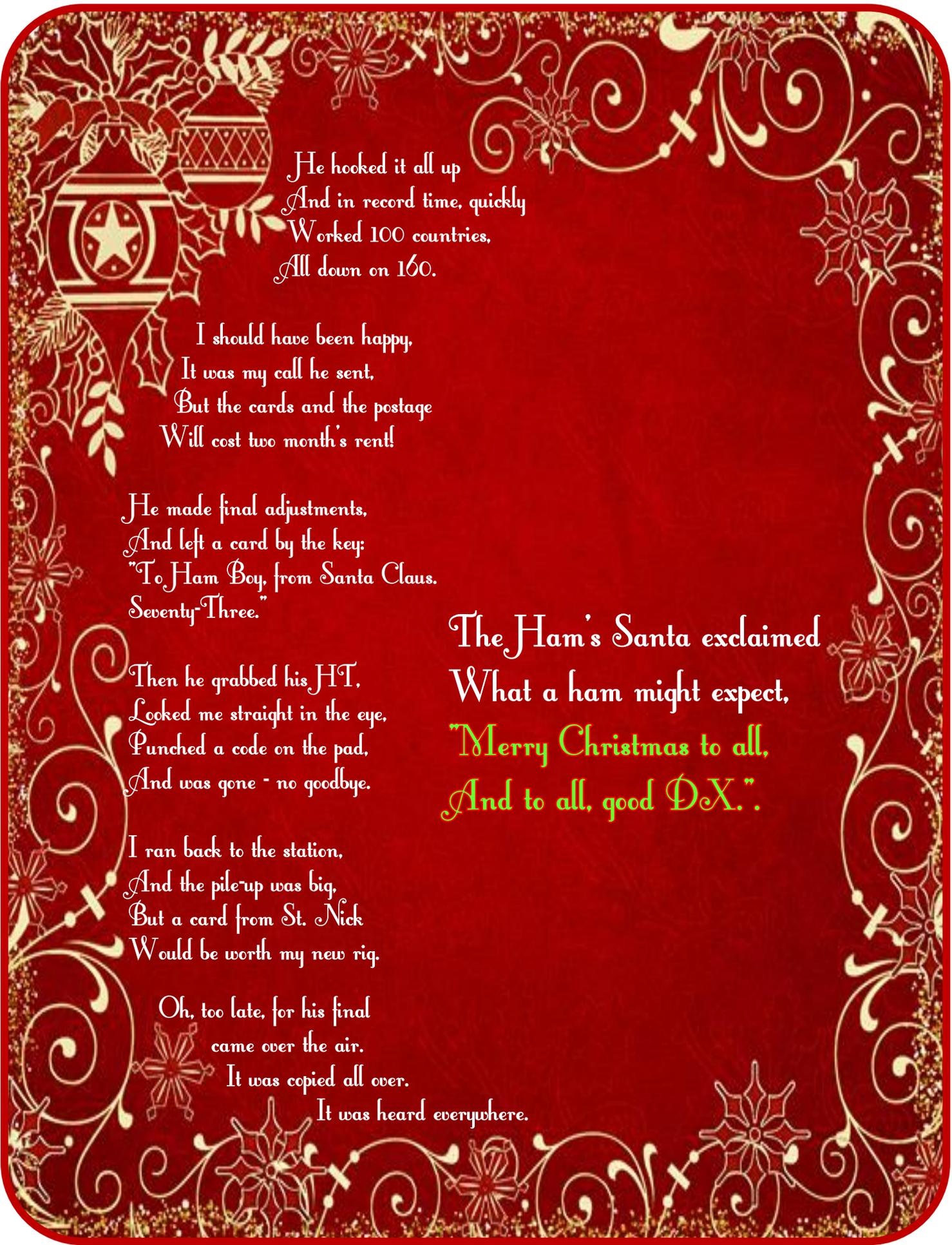
He corrected the settings
In my TNC.

He repaired the computer
That would not compute,
And he backed up the hard drive
And got it to boot.

Then, he reached really deep
In the bag that he brought,
And he pulled out a big box,
"A new rig?" I thought!

"A new Kenwood? An Icom?
A Yaesu, for me?"
(If he thought I'd been bad
it might be QRP!)

Yes! The Ultimate Station!
How could I deserve this?
Could it be all those hours
that I worked Public Service?



He hooked it all up
And in record time, quickly
Worked 100 countries,
All down on 160.

I should have been happy,
It was my call he sent,
But the cards and the postage
Will cost two month's rent!

He made final adjustments,
And left a card by the key:
"To Ham Boy, from Santa Claus.
Seventy-Three."

Then he grabbed his HT,
Looked me straight in the eye,
Punched a code on the pad,
And was gone - no goodbye.

I ran back to the station,
And the pile-up was big,
But a card from St. Nick
Would be worth my new rig.

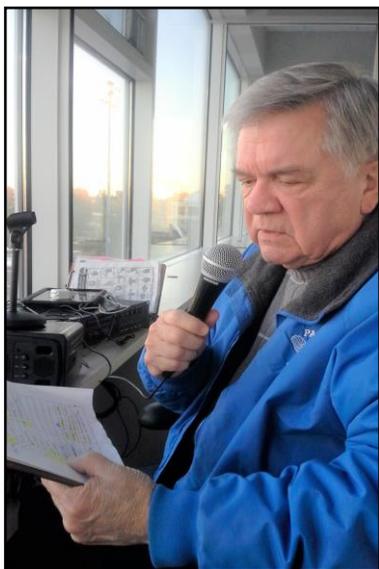
Oh, too late, for his final
came over the air.
It was copied all over.
It was heard everywhere.

The Ham's Santa exclaimed
What a ham might expect,
"Merry Christmas to all,
And to all, good DX."



Strays

K5YY IN THE PRESSBOX!



BVRC member and world renowned DXer and DXpeditioner San Hutson – K5YY also volunteers his great broadcast voice as PA announcer for the Sonora Middle School football games in Springdale. San tells us, “My daughter teaches there, and the principal is a lady who we as a family knew when we lived in Paris. My daughter reminded the principal that I used to announce on 50s and 60s shows in Atlanta, Stuttgart, DeWitt, Little Rock KXLR sports shows, and Paris football on the FM station there several years ago. She told the principal, “Dad can do the Press Box announcing for sure....” Kudos to you San, for helping to promote youth sports!



Each Saturday morning, some of our BVRC members gather for food, fun, and ham radio fellowship at Rosita’s Mexican Restaurant at the intersection of US-71 and MO Hwy-00, just north of the AR/MO state line. The get-together starts at 8 am each Saturday. Bob – WBØAUQ says the group always has a very pleasurable time discussing ham radio topics, as well as other interesting items. If you would like more information on the gathering, contact Bob.

Wouff Hang Antenna N5SU Version



BVRC member John – N5SU’s latest project is the Wouff Hang antenna (October 2019 QST, page 30). John is also one of the fine moderators on the Sunday afternoon 3.820 Roundtable.

BVRC VE REPORT

November 9, 2019



Congratulations!

Albert Skiles – KI5EQU – New Extra!!!

(Albert was one of 20+ new hams licensed in late April, during the accelerated weekend licensing class sponsored by BVRC)

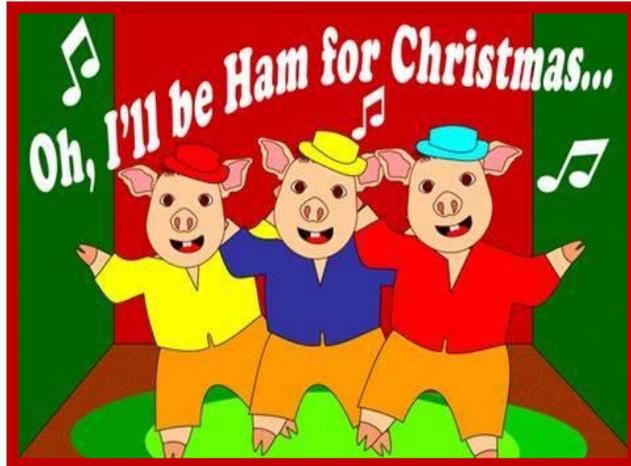
Test sessions are conducted each 2nd Saturday of the month, 2 pm, at the Highland Christian Church, 1500 Forest Hills Blvd. (AR-279) in Bella Vista.

Help promote the availability of the Club's monthly test sessions. Tell your friends and acquaintances!

WELCOME NEW BVRC MEMBERS!!!



Steve Gibbs – K50Y – Bentonville
Anna Ahlman – KG5FDF – Bella Vista
Dennis Lightburn – KI5FPA – Gentry
Bryan Vernetti – KI5GWD – Bentonville
Ivan Huffmaster – KG5SPC – Lincoln



A Very Merry Christmas
From WYRC



Hey BVRC members!
 Don't miss the annual
 Bella Vista Radio Club
 Christmas dinner & new officer
 elections at the Highland Christian
 Church in Bella Vista Thursday
 evening, December 5 at 7 pm!
 Great food, great fellowship, door
 prizes, and great ham radio fun.....
 See you there! HO HO HO!



BVRC CLUB ACCESSORIES!

They make great Christmas gifts!

- Key Tags • Badges
- Desk Name Plates
- Mouse pads
- Ceramic Mugs
- White & US Flag
 License Plates

To order your personalized club product, click [here](#) !

K5UNX CW HOUND!



Wayne Patton – K5UNX, has really been hitting the CW mode lately with a vengeance! He has finished CW Academy-Level 2, and has made about 35 CW contacts, mostly in state qso parties. Wayne tells us so far, the highlight of his CW operating has been a QSO with the VP6R DXpedition team on Pitcairn Island on 15 meters.....way to go Wayne!!!

HAM 101

THE SIGNAL Monthly Column for New Hams

HF RADIO PROPAGATION & SUNSPOTS

As electromagnetic waves, and in this case, radio signals travel, they interact with objects and the media in which they travel. As they do this the radio signals can be reflected, refracted or diffracted. These interactions cause the radio signals to change direction, and to reach areas which would not be possible if the radio signals travelled in a direct line.

HF radio communications of various forms including two-way radio communications, maritime mobile radio communications, radio broadcasting, amateur radio communications, and in fact any form of radio communications that uses the HF bands and ionospheric radio propagation, is very dependent upon the state of the ionosphere. The higher the levels of radiation received from the Sun, the greater the levels of ionization in the ionosphere and in general this brings better propagation conditions for HF radio communications.

It is found that the number of sunspots on the Sun has a considerable effect on the levels of radiation emitted and hence impacting on the ionosphere. The higher levels of radiation received from the Sun, the greater the levels of ionization in the iono-

sphere, and in general, this brings better propagation conditions for HF radio communications.

What are sunspots?

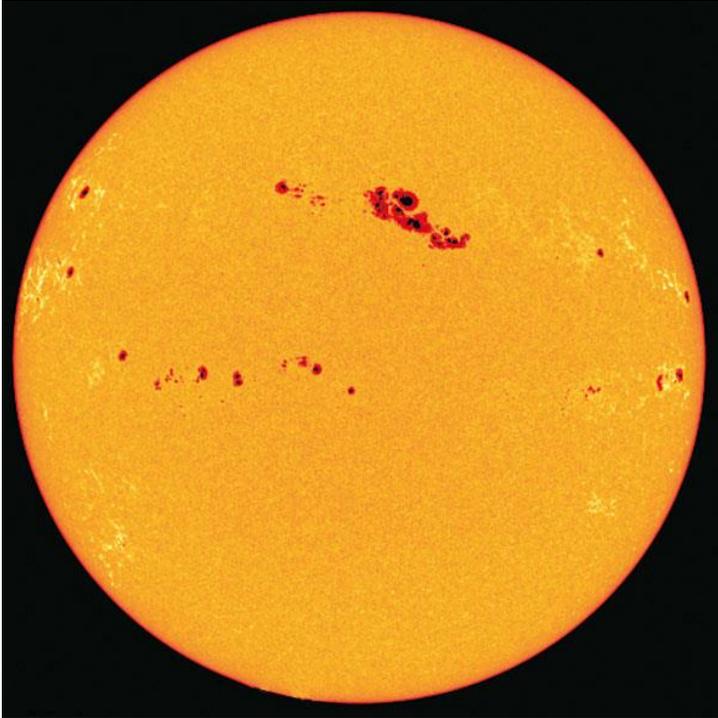
If the sun is viewed by projecting its image onto a screen, dark areas can be seen from time to time. These can last from a few hours right up to several weeks. These spots are cool areas (relatively speaking) on the surface of the sun. The temperature is around only 3000°C against a sizzling 6000°C for the rest of the surface. It is much hotter under the surface reaching temperatures in excess of a million degrees Celsius.

(A WORD OF WARNING: Under no circumstances should the sun ever be viewed directly, even through dark glasses. In the past, many people have had their eyesight damaged by doing this.)

These sunspots are areas where there is intense magnetic activity. The fields in these areas are enormous and as a result the surface of the sun is disrupted. In these areas the surface cools dramatically causing a darker region to be perceived.

Around the sunspot there is an area called a “plage”. This is slightly brighter than the surrounding area and it is a large radiator of

cosmic rays, ultra-violet light and X-rays. In fact, it results in the overall level of radiation coming from the sun to increase. In turn this increased radiation level from around the sunspots causes the ionosphere to become ionised to a greater extent. This means that higher frequencies can be reflected from the ionosphere.



As sunspots appear in groups, especially the larger ones a sunspot number was devised. This is not the number of sunspots that are observed but a number indicating the level of sunspot activity. The number is very closely related to the actual amount radiation received from the Sun. In this way, it is a good measure of solar activity. The daily readings are smoothed mathematically to take out the erratic variations to give the Smoothed Sunspot Number. Sometimes the abbreviation SSN is seen, and it is this smoothed sunspot number that it refers to.

Eleven-year cycle

The number of sunspots on the surface of the sun varies with time. At times, very few

visible, whereas at other times the number is very much greater. Although the number varies greatly over short periods of time as the sun rotates, careful analysis using the SSN reveals a longer-term trend. It is found that over a period of approximately eleven years over which the sunspots vary. At the peak of this cycle conditions on the bands at the top of the short-wave spectrum are very good. Low power stations can be heard over remarkably long distances. At the bottom of the cycle, bands around 30 MHz will not usually support normal propagation via the ionosphere.

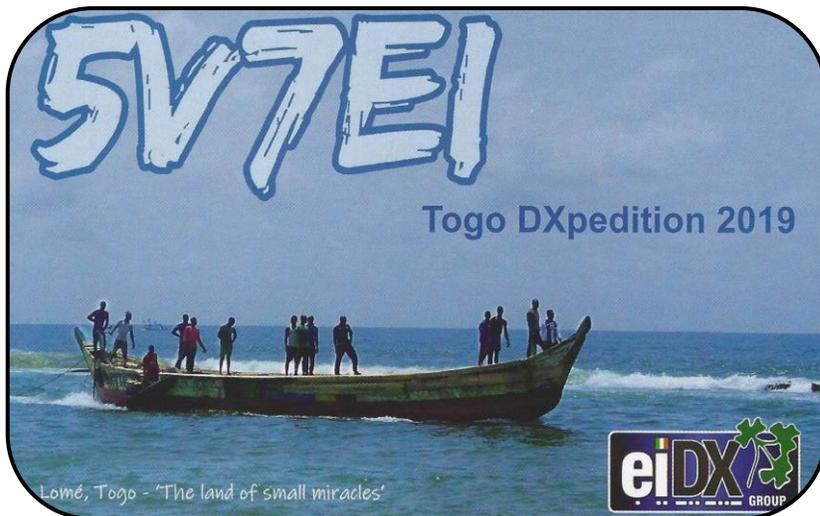
Sunspots have been observed by the Chinese since before the birth of Christ. However, it was not until the mid-eighteenth century that astronomers started to keep records of sunspot numbers. By looking at these over the years it is possible to see the trend, and the cycles which have occurred since then. For example, Cycle Number 22 officially started in September 1986. It started with a sunspot number of 12 and rose rapidly over the following 33 months to reach a peak of 158. From its peak, the sunspot number fell slightly and rose again to give a second, smaller peak before falling to bring the cycle to an end in 1996.

Sunspot activity is of great importance to anyone involved in HF radio communications. The level of sunspot activity has an enormous effect on the ionosphere, and hence, HF radio propagation conditions.

Accordingly, even a basic understanding is advantageous, especially when striving for long distance (DX) communications.



DXpeditions are planned, coordinated, and organized journeys – sometimes by a solo operator and other times by a team of operators – to give hams worldwide the opportunity (many times a *rare* opportunity) to contact that location for amateur radio award credit. There are several awards sponsored by different ham radio organizations on contacting many foreign countries, the most famous and prevalent being the DXCC (DX Century Club) sponsored by the ARRL, the WAZ (Worked-All-Zones) sponsored by CQ magazine, and others.



The base level of the DXCC requires the contacting and confirmation of a minimum of 100 geographical entities, as defined by the ARRL in the DXCC rules.

An "entity" for radio award purposes is any location that is either politically or physically remote (or both) from other jurisdictions/locations.

For example, even though Alaska and Hawaii are politically part of the United States, they are separate DX entities (physically separate). Small countries, even ones surrounded by larger ones – such as Vatican City – count.

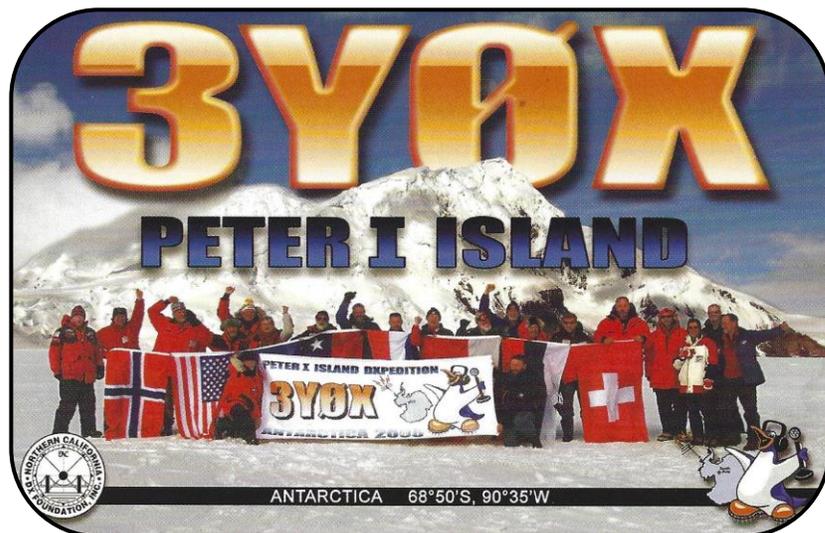
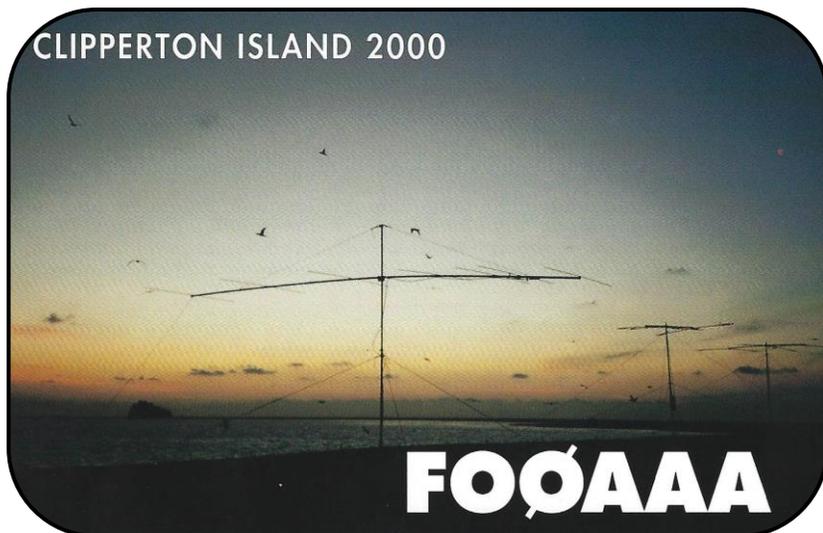
Other entities include transnational organizations such as the International Telecommunications Union and the several locations of the United Nations (New York City, Timor, etc). These are within their host countries but have distinct ITU prefixes.

For example, the United Nations in New York City has an amateur radio station within its confines, 4U1UN. It is not the United States. It is its own entity. Also, a few areas of historic or special status are included, such as Sardinia, the Sovereign Military Order of Malta, Antarctica, and Western Sahara.

In addition to licensing and survival issues, DXpedition participants devote much attention to the equipment they use.

In an extremely rare location for a popular awards program like DXCC, thousands of stations may be calling the DXpedition at a at any one time (known as a 'pile-up'). Therefore, DXpedition members will aim to use high power and gain antennas on as many bands as practical, in order to achieve a strong signal worldwide and keep control of the inevitable pileups that occur. Operators may also receive and transmit on different frequencies, called "*split operation*", in order to be heard by distant stations without interference to their signal from the pileup. This can also help the operation to make a very large number of contacts with parts of the planet that are unfavorable propagation from the DXpedition site. For smaller operations to remote locations, smaller radios which run off a 12v DC power supply and antenna systems which are more easily transported are favored over larger and more difficult to transport equipment. However, generators are usually used because of the power requirements for amplifiers and the ease of refueling versus recharging a battery.

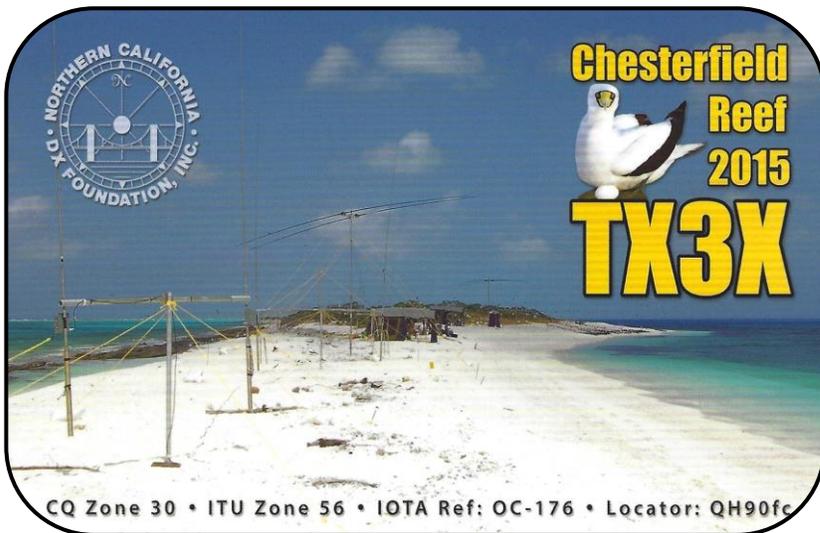
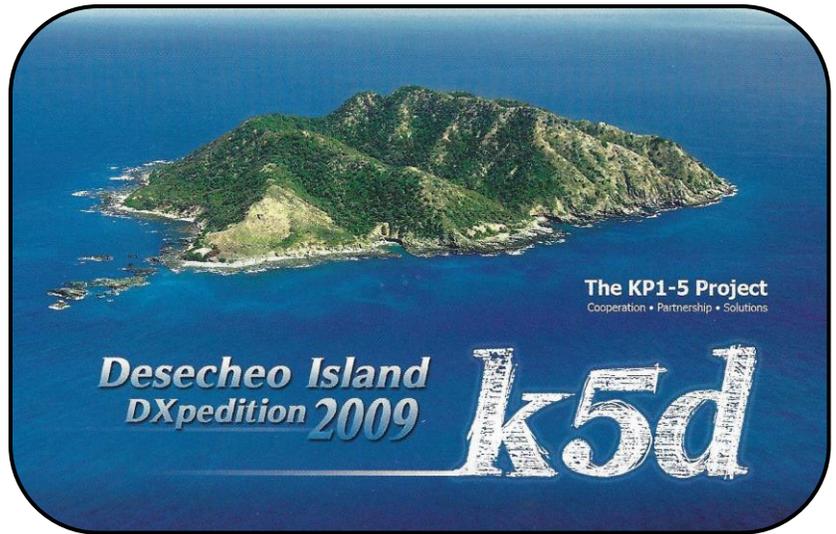
CLIPPERTON ISLAND 2000



When the individual or group arrives at the DXpedition destination, they must set up their station and get on the air. DXpeditions are usually group affairs since the desire is to make as many contacts as possible from the location. Round-the-clock operations on multiple HF bands simultaneously are typical, which necessitates a group activity. Recently, the use of the Internet to upload logs (allowing quick confirmation of questionable

contacts) and for QSLs (formal confirmation) has made the process somewhat easier.

Some amateurs operate from locations while they are on holiday, where there are few resident operators. These operations are often more leisurely affairs. Nonetheless, the operator will seek to make as many contacts as possible in the operating time available, with the result that contacts are often extremely brief, limited just to an exchange of signal reports and callsigns.



Many DXpeditions are organized around various radio contests that happen throughout the year. This is often done so that the DXpedition station can gain an advantage in contests and maximize the number of contacts that they make during the DXpedition, since the radio bands are the most active during contests.

If you are trying to add rare or hard-to-get countries to your DXCC “QSL

trophy case”, DXpeditions will drastically help you in that quest. Some of the best resources you can use to keep-up with current DXpeditions are: NG3K’s website run by Bill Feidt/NG3K:

<http://www.ng3k.com/Misc/adxo.html>

Also, the Ohio/Penn DX Bulletin at <http://www.papays.com/opdx.html>, and DX Summit:

<http://www.dxsummit.fi/#/>



Back by popular demand – We have had several members request that for the finale of this year's December issue, that we reprint this item from last year's December SIGNAL. They have advised they enjoyed it so much they would like to see it again, and also to accord our members who have joined since last December, to enjoy it also.....so, here ya go:

We would like to share with you an excerpt from the 1947 motion picture "The Bishop's Wife" starring Cary Grant, David Niven, and Loretta Young (somewhat modified to ham radio style):

THE EMPTY STOCKING

Tonight, I want to tell you the story of an empty stocking: Once upon a midnight clear, there was a child's cry, a blazing star hung over a stable, and wise men came with birthday gifts. We haven't forgotten that night down through the centuries. We celebrate it with stars on Christmas trees, with the sound of bells, with carols, and with gifts.....but especially with gifts. You give me a new headphone set, I give you a new dual band HT. Aunt Martha has always wanted a food processor and Uncle Henry can do with a new IC-7300. We forget no one, adult or child. And all the stockings are filled. All that is.except one.

And we have even forgotten to hang it up. The stocking for the child born in a manger. It's His birthday we're celebrating, you know. Let us never forget that

Let us ask ourselves what He would wish for most. And then let each put in his share - lovingkindness, warm hearts, and a stretched-out hand of tolerance. All the shining gifts that make peace on earth.

Have a Merry Christmas and a blessed and prosperous 2020 — Don, K5DB

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