THE NUGGET

Mother Lode DX/Contest Club

The Newsletter of the Mother Lode DX/Contest Club

September 2024 **Volume 29 Number 9**

September Meeting

The September 21st meeting of the MLDXCC will be at Los Hermanos Mexican Restaurant at 60 Ridge Road in Sutter Creek.

California QSO Party
Let us know your plans. Dean, N6DE, sent me the slides from his CQP presentation, so we'll be showing them. RSVP to W1RH.

Secretary's Report

Mother Lode DX/Contest Club

Meeting Minutes

August 31, 2024

Habanero Hots, Lodi

Meeting was called to order at 12:58 p.m. by President Steve Allred, NC6R. 14 members and 3 guests were present.

Steve welcomed everyone. Each member and guest then introduced themselves.

Old Business:

The July treasurer's report was published in the August newsletter. Bob Hess, W1RH moved to accept the report as published. Rich Cutler, WC6H, seconded the motion, which passed unanimously.

The minutes of the July 27th meeting were published in the August newsletter. Steve Dyer, W1SRD moved to accept the minutes as published. Norm Wilson, N6JV seconded the motion, which passed unanimously.

New Business:

None

Member Achievements:

· Gary Johnson, NA6O reported that he has completed 8 band DXCC and 9 band WAS

· Dennis Moore, NJ6G reported that he now has over 300 DX entities.

Announcements / Discussion:

· Steve Allred, NC6R listed several upcoming contests, and reminded members they can find all contests at contestcalendar.com/index

· Steve also gave a quick run-down of the upcoming DX opportunities.

· 2 upcoming swap meets were announced – Sept. 8th Electronics Flea Market at West Valley College, Saratoga, and Sept. 21st Lincoln Ham Swap

· Jim Varney, K6OK mentioned that he is serving on the development team for Morse Runner – a computer program that simulates pile-ups for CW practice. They are currently working on the exchange for Sweepstakes (since that is such a long exchange of information) and updates should be out around the beginning of October.

· Someone mentioned that the NCCC picnic would be Sunday October 20th at N6RO. This is Sunday of Pacificon weekend.

Next Meeting:

Proposed date is September 14th, location TBD and date to be confirmed by our vice president.

Adjournment:

Doris Wong, K0BEE moved to adjourn the business meeting and move to the presentation; Dave Sanders, K6TQ seconded the motion, which passed. Meeting was adjourned at 1:26 p.m.

Presentation:

Gary Johnson, NA6O gave an interesting talk on building his remote Super Station.

Respectfully submitted,

Sue Allred, K6SZQ for

Lee Gravesen, KM6VNZ

Treasurer's Report

MLDXCC Treasurer's Report - August 2024

7/31/2024 Opening Balance $2,509.07

Income $0.00

Expenses $0.00

8/31/2024 Ending Balance $2,509.07

Sue Allred, K6SZQ

DELETED COUNTRIES

Thanks to the Southern California DX Club Newsletter

Aldabra

Located in the Indian Ocean near Comoros Aldabra is a coral atoll. It is actually the outer island of the Seychelles Archipelago. It is the second largest coral atoll in the world. The island name is a morph of the Arab word AL-Khadra (meaning green) whose meaning somehow relates to harsh and sun-baked. This is similar to the Hawaiian name Lahina which means land of relentless sun. The atoll his harsh with a large brackish lagoon and no natural fresh water source. It is interesting that it is the home of one of largest tortoises, that Aldabra tortoise. Michael Jackson owned one and ended up in Tom Paquette, N6OT backyard. The island was uninhabited.

The Persians and Arabs visited the island early on. It was visited by the Portuguese in 1511. In the mid 1700s the French declared it a dependency of Reunion Island. Britain held the islands in 1810 but eventually returned to France. Efforts to colonize the island failed and now ship rats out number all other species.

In 1965 Aldabra, Desroches, and Farquhar became part of the British Indian Ocean Territory. It considered putting an Air Force base on the island and a BBC station. The projects were met with opposition by the environmentalist. Aldabra was declared a UNESCO World Heritage Site.

Tube of the Month

Vacuum Relays

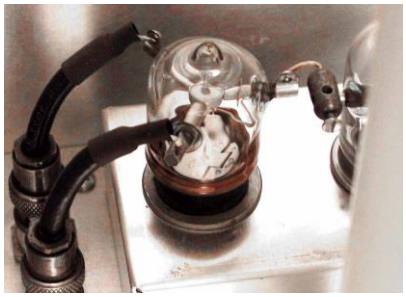
I am not sure when the first vacuum relays were commercially produced, but the Sperti Electronics Company was making a small unit in about 1938. Collins Radio produced the famous AN/ART-13 autotuned airborne transmitter in 1940 that used a Sperti relay for an antenna switch. These were mechanically actuated where the common pole is mounted in rubber. I think they were only rated at 1500 volts. Photo (1) shows one in a piece of Navy gear from 1952. In about 1942, EIMAC starting making a series of high voltage relays designated VS-2, 4, 5 and 6 (2) that were rated at 20,000 RF volts at 5 amps up to 30 MHz. These relays could handle 14,000 volts DC. Copies of these relays were made by TORR and Kilovac.

1 

2

3

4



5

6

7

8

At the end of WWII, Jo Jennings, as he did with vacuum capacitors, decided to develop and expand the production of vacuum relays. Their first products were relatively large such as the 4-inch diameter, 4-pole double throw unit shown in (3). When Jennings developed some very small units like the RB1 (4) they became very popular because no more cleaning burned relay contacts. They were rated for 14 KV at 5 amps and a million operations. The SPDT units could be used in pairs as is shown in (5) from my 6-meter amplifier. They stacked the decks to make DPDT relays like the RB3 in photo 6 and the more modern Kilovac H14 (7) which currently lists for $3012. The RE6 (8) is a larger unit rated at 30 KV at 25 amps. Modern vacuum relays are ceramic and are made in many sizes and configurations by Jennings and others.

While I was doing research on the date of the invention of the vacuum relay, I found an odd use of the early EIMAC VS2 type units. In 1985, movie prop builders were tasked with making some fake electronic equipment. They found some of these relays and mounted them in a box with LEDs etc. The movie was *Back to the Future* and the box became the "Flux Capacitor". Today the cult followers of this movie all want a Flux Capacitor and are willing to pay good cash for these relays. I have the relays, but I haven't been in a DeLorean in 50 years and my stash of plutonium is depleted.

Norm N6JV Tube museum

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Antenna of the Month

Gary, NA6O

September, 2024

Moxon

Given a chance, most hams would prefer to have a Yagi up on a tower for as many bands as possible. It's horizontally polarized, has good forward gain and rejects signals off the back and sides... A great combination. But sometimes there is an issue of space because the elements can be quite long. Fortunately a fellow named Les Moxon G6XN (SK) a British ham, came up with a simple way to shrink a conventional 2-element Yagi to about 70% of original length without compromising performance. In fact, it's front-to-back ratio is actually superior.

The basic outline of a **Moxon rectangle** antenna appears in Fig. 1. It's really just a two-element Yagi with the element tips bent at 90 degrees. In fact, the total lengths are the same: A half wavelength for the driven element, and about 5% longer for the reflector. The trick is that the bend locations and the gaps between the elements have to be optimized to give you the best front-to-back ratio, gain, and a good 50-ohm match. In fact, the dimensions are fairly critical if you want peak performance.

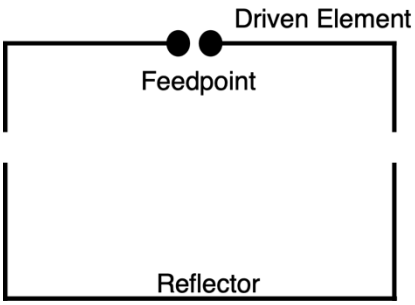

Figure 1. Basic layout of the Moxon rectangle antenna.

Like many antenna designs, this one is evolutionary. The last great contribution was by L. B. Cebik W4RNL (SK) who studied it in depth and came up with a set of equations that provide those important optimized dimensions [Ref. 1]. And to make life really easy for us all, Dan Maguire AC6LA as written a dedicated application (*Moxon Rectangle Generator*, Fig. 2) that gives you the magic numbers [Ref.2]. You simply supply the frequency and the size of the wire or tubing. What could be easier? His program even supplies an output for simulators including EZNEC in case you want to explore further. I should also mention that the bent-element concept has been further adapted and morphed into many other designs including the popular Spiderbeam and Hexbeam. Good ideas do seem to propagate.

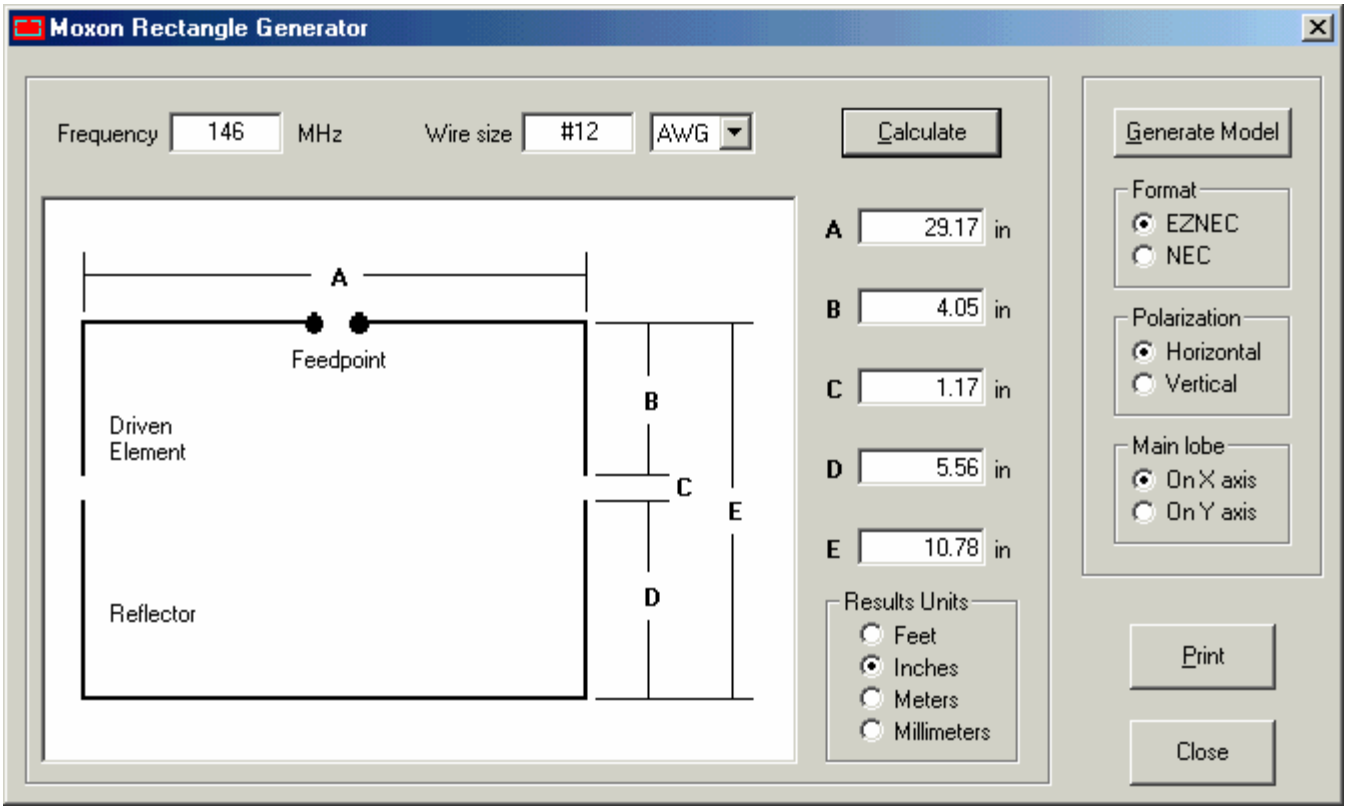

Figure 2. Screenshot of the Moxon Rectangle Generator *(courtesy AC6LA)*

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Construction

You can build a Moxon from either wire or tubing but most designs are based on wire supported by lightweight fiberglass spreaders in an X-shaped configuration. Look up Moxon construction on the web and you'll find many practical examples. An interesting adaption for 40 m was designed by Dave Leeson N6NL who modified a Hy-Gain XM240 2-element Yagi to achieve superior pattern and greater bandwidth in the same compact footprint. This has been very popular and is easy to build [Ref. 3].

Performance

Compared to a regular 2-element Yagi, an equivalent Moxon will yield a forward gain only a fraction of a dB less. But it's distinct lack of rear lobes is remarkable, reliably down 20 dB versus only 10-12 dB for the most common Yagi designs. It achieves this in a manner similar to a loop-fed array (LFA) Yagi via the added coupling provided by the end wires. Those perpendicular wires give the designer an extra degree of freedom when optimizing the pattern. Results are shown in Cebik's report. Also, the Moxon has excellent bandwidth in terms of SWR–much better than Yagis shortened with coils.

Conclusion

The Moxon rectangle is really a win-win design and its popularity including its many derivatives is well deserved.

References

1. L. B. Cebik, W4RNL (SK), Designing Moxon Rectangles by Equation and by Model. http://on5au.be/content/a10/moxon/moxgen.html

2. Moxon Rectangle Generator application by AC6LA. https://ac6la.com/moxgen1.html

3. W6NL Moxon on a Cushcraft XM240. http://www.k3lr.com/engineering/moxon/W6NL_Moxon104.pdf

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Super Fox vs Fox Hound

There has been a series of discussions on the club reflector concerning the comparison of the new Super Fox program and the older Fox Hound version of WSJT-X. This link contains a comparison performed by the WSJT-X developers.

SuperFox_Performance.pdf

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Club Log Standings 2024

Overall

1	W1SRD	Steve Dyer	231
2	NK7I	Rick Bates	227
3	W6DE	Dave Engle	225

CW

1	K6YK	John Lee	183
2	W1SRD	Steve Dyer	138
3	W6DR	Dave Ritchie	124

Phone

1	W1SRD	Steve Dyer	124
2	K6YK	John Lee	116
3	K6TQ	Dave Sanders	98

Data

1	NK7I	Rick Bates	218
2	W6DE	Dave Engle	204
3	W1SRD	Steve Dyer	195

Awards Checkers ARRL

Rick Samoian, W6SR

(DXCC, WAS, VUCC, 160M)

The NOAA Solar Update

Click the link below to display the latest NOAA solar predictions.

http://www.swpc.noaa.gov/products/weekly-highlights-and-27-day-forecas

Upcoming Events

For the latest contest info. click on the following link:

http://www.contestcalendar.com/contestcal.html

Upcoming DX and DXpeditions

Click the link below to display upcoming DXpeditions.

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

MLDXCC Focus Contests

ARRL SS CW/PH
California QSO Party

MLDXCC Reflector

The MLDXCC reflector is maintained at groups.io. Visit https://groups.io/g/mldxcc

We also maintain a spotting reflector at https://groups.io/g/MLDXCC-Spots

We are also on Facebook! https://www.facebook.com

Classifieds

Members are requested to review their classified ads each month for accuracy and to resubmit their ads or confirm their desire to keep it running in the next issue.

Need QSL cards, business cards, club banners? Contact Vina K6VNA vina@sign-tek.com

W6SR

I have two items for sale/trade.

1. Recently I acquired a Johnson KW tuner (site unseen) from a friend. My plan was to modify it for the remote radio setup at W1RH. However, after I inspected the unit, it is way too nice to modify. It's (IMHO) collector quality, original in and out. It even has the original, working SWR meter, relay, relay power supply and directional coupler cable. But not the directional coupler. Couplers are more available than the KW tuners since they were used on the 250W tuners also. I hate to see a vintage piece of collector quality gear hacked. Anyone interested in one of these? Price, you tell me, best offer takes it.

My portable Honeywell generator is excess to my needs, and needs a good home.
Used very little, mostly for microwave (10GHz) contesting and to power up tools in the field at the old place.
I always ran it out of gas when stored, and it was EZ start. Runs hours on 1 gal of gas.
What's it worth? You tell me, offer.

Contact me at ricksamoian@outlook.com
de Rick, W6SR

K6VVA

Antennas 4 SALE

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ANTENNA ("New-In-Box") – Never Installed
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* RAIBEAM – 3el 20M Yagi (NIB) – Price: $300
A "Collector's Item" for some?

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ANTENNAS (USED)
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1. CUSHCRAFT 104CD (4el 10m Yagi) - Price: $300 USD
Mostly New Hardware in bag.

2. 40m 4-SQUARE Antenna Components - Price: $300 USD
Mostly Butternut aluminum sections and base coils (possibly for 80m?).

3. Force 12 Sigma 180S 80m Rotatable Dipole - Price: $300
Supposedly "T-Bar" loading but would need to be verified. Hopefully with all pieces.

This does NOT have large in-line coils, but a heavy-duty boom to mast mounting plate.

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For Pick-Up Only in the Morgan Hill/Gilroy (CA) rural area. Photos available.

4 SALE

U.S. TOWER TX-455 w/base and coax standoffs – Price: $2,000 USD

Antenna support mast w/thrust bearing and large bolts for concrete installation included.

For Pick-Up Only in the Morgan Hill/Gilroy (CA) rural area. Photos available.

email ONLY TO: items4sale@k6vva.com (include your Callsign, Name & Phone Number !!!).

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Area Clubs

Northern California Contest Club - https://www.nccc.cc

Lodi Amateur Radio Club -
http://www.lodiarc.org

Stockton Delta Amateur Radio Club -
http://www.w6sf.org

Pizza Lovers 259 –

https://www.pl259.org

El Dorado Amateur Radio Club -
http://edcarc.net

Sierra Foothills Amateur Radio Club -
http://www.w6ek.org

Redwood Empire DX Association -
http://www.redxa.com

Calaveras Amateur Radio Society
http://calaverasars.org/

Tuolumne County Amateur Radio Electronics Society (TCARES)
https://tcares.net/

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The MLDXCC NEWSLETTER