# THE NUGGET

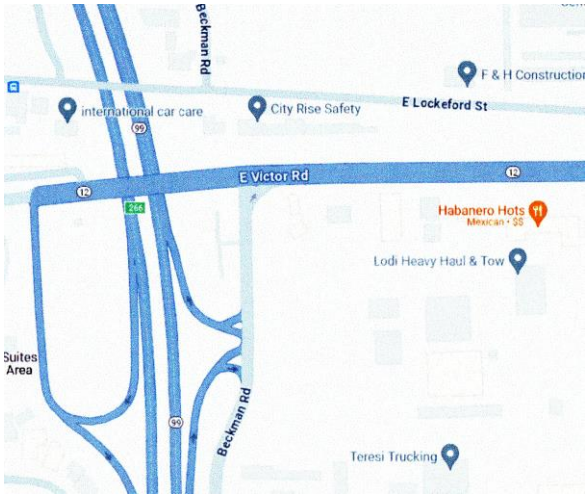
Mother Lode DX/Contest Club

**The Newsletter of the Mother Lode DX/Contest Club**

**August 2024** **Volume 29 Number**

## August Meeting

The August 31st meeting of the MLDXCC will be held at the Habanero Hots restaurant located at 1024 E. Victor Road (HWY 12) in Lodi.




Gary, NA6O, will have a presentation on the remote super station in the East Bay Hills that was assembled by Gary and Ian, W6TCP. RSVP to W1RH at w1rh@yahoo.com.

## Secretary's Report

Mother Lode DX/Contest Club

Meeting Minutes

July 27th, 2024

Round Table Pizza, Sutter Creek

Meeting was called to order at 12:42 p.m. by President Steve Allred, NC6R. 15 members and 2 guest were present.

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

Old Business:

The June treasurer's report was published in the July newsletter. Steve Allred, NC6R moved to accept the report as published. Steve Dyer, W1SRD seconded the motion, which passed unanimously.

The minutes of the June 29th meeting were not published in the newsletter, and the Secretary is not present. We will attempt to get those minutes to Norm to be published.

New Business:

None

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.

Next Meeting:

Proposed date is August 24th, location TBD and date to be confirmed by our vice president.

Adjournment:

Roger Newman, W6WHU moved to adjourn the business meeting and move to the presentation; Bob Hess, W1RH seconded the motion, which passed. Meeting was adjourned at 12:55

Presentation:

Steve Dyer, W1SRD gave an interesting talk on FT8 – The "View from the Fox"

Respectfully submitted,

Sue Allred, K6SZQ for

Lee Gravesen, KM6VNZ

## Treasurer's Report

MLDXCC Treasurer's Report - June 2024

5/31/2024 Opening Balance $2,509.07

Income $0.00

Expenses $0.00

6/30/2024 Ending Balance $2,509.07

Sue Allred, K6SZQ

# DELETED COUNTRIES

Thanks to the Southern California DX Club Newsletter

## British Somaliland


Historically, the Gulf of Aden was infested with pirates from both what is today Somalia and Yemen. This forced Rome to put a garrison at what has become Aden in Yemen. Somalia has no natural resources. It's one claim to fame is they were the first to domesticate the camel. In fact, the meat in Somali spaghetti is camel.

Originally, there were three Somalilands, French, British, and Italian. French Somaliland became Djibouti and Italian and British became the Somali Republic. British Somaliland became a protectorate of Britain in the 1800s when an agreement of several Somali clans was signed with the UK. The motivation was to dissuade the Emperor of Ethiopia from attacking them. The protectorate was administered under British India and part of the garrison in Aden were sent to defend it. The British supplied goods and services to the region not crippling control and constraint. They also kept slavery in check.

At the turn of the century a new leader, Hassan, came to power who challenged the British. His followers called the Dervishes. He caused a lot of grief. The British could not subdue him until they tricked his group to congregate and bombed. Hassan did not die there but was rendered insignificant. He died in 1921.

During WWII Italian Somaliland attacked them and, for a short while, they held the territory. At the end of the war Britain held both territories. At the end of the war there was another rebellion led by Sheikh Bashir. He fought a guerilla campaign and humiliated Britain.

In 1960 Britain decided to grant Somaliland independence. This occurred in late June and 5 days later British Somaliland merged with Italian Somaliland to from The Somali Republic.

In 1991 British Somaliland fought a civil was and declared it's independence from the Somali Republic. To date it is not recognized but… maybe someday we will have a new DX entity albeit, because of extreme violence, one most would decline to visit.

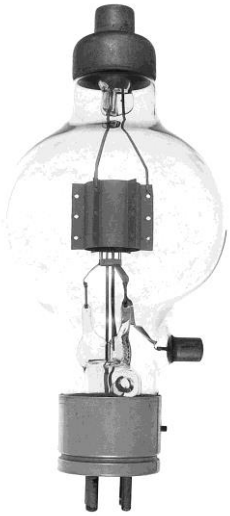


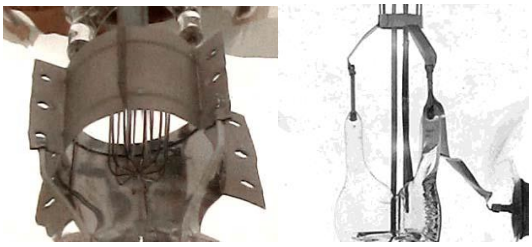
# Tube of the Month

## 50T

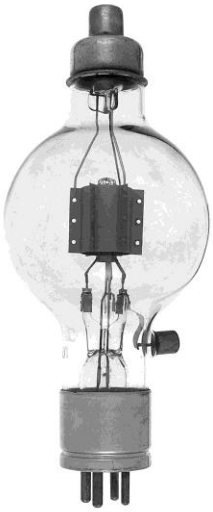
From 1936, Eimac marked all their tubes with a date code. This was expanded to add a factory code in WWII at the insistence of the military. The earliest Eimac tubes, the 150T and the 50T weren't usually marked at all. With a close examination of several different 50T tubes, it is possible to develop a timeline based on the evolution of the construction techniques.

The first 50Ts began production in late 1934. The 50T was rated at 75 watts and had a mu of 12. The original tube had a stepped plate cap, metal base, elongated double loop shaped filament and a filament press with three long glass fingers that supported the grid. Plate and grid were made of tantalum metal. Wires that supported the grid were molded into the fingers. An additional wire was molded into the press and it was used to supported the center of the filament. The grid connection was a metal ribbon that was wrapped around one of the grid support wires.

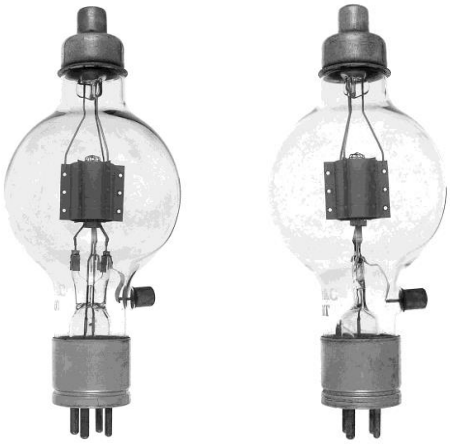


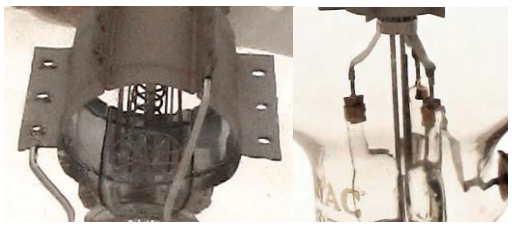


The requirement for the assembly to be done by a glass blower was an obvious problem for productivity. All alignment had to be done with a torch. Having the grid structure made separately must have helped assembly. In the second version, the three-grid support wires were terminated in upside-down U-shaped tabs that could be placed over the glass fingers. The glass blower just had to assemble the filament wires and assure that the fingers were the same length. The ribbon from the grid cap was attached to one of the tabs. The plate cap was changed to one with a thin lower skirt.



The third version had a spiral filament that didn't require an additional support wire. Perhaps 10% of the tubes with the spiral filament were made with a single, flat press with two fingers. Each of these changes show an improvement in the ease of assembly, mechanical stability or cost of production.





In 1936 the 50T became the 100T with the plate and grid connections made to use heat dissipating connectors.

Norm N6JV
Visit the museum at N6JV.com

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## Antenna of the Month

# Portable All-Band Vertical

Gary, NA6O
August, 2024

Having an all-band antenna that's lightweight, easy to set up and easy to use is handy for all kinds of portable operations such as POTA and Field Day. After a request from my blind ham friend Earl KG7UKW, I put together something that he can take to the field with minimal hassle. It's based on a non-resonant vertical wire and a modest number of ground radials with a matching transformer to improve the average SWR. This one uses one of the "magic" vertical lengths of 25 feet which actually resonates around 9 MHz. Avoiding resonance on any ham band is an old trick that helps avoid extreme feed point impedances which are hard to match.

## Construction

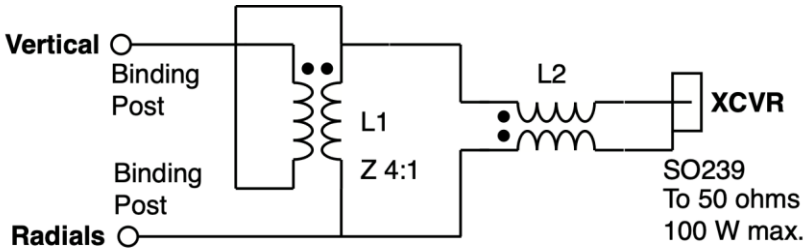
To keep things simple and lightweight, I used 20 gauge insulated wire for both the vertical and radials, and a 32-foot telescoping fiberglass pole from *Sota beams* [Ref. 1], which we extend to about 25 feet. Other types will also work such as the ones made by *Jacktite*. The pole can be supported at the base by almost anything. In an open area, a 3-foot construction stake works great. Heavy Velcro straps tie the mast in place. Radials are connected together via screws and wingnuts at a copper ring at the base but almost any connection method will do. I chose to use eight radials 25 feet long as a compromise. More is better of course but it becomes a matter of convenience and diminishing returns after a point. The radials simply lie on the ground. Finally, the matchbox is strapped to the base and connected between the vertical and radials (Fig. 1).

*Figure 1. Base of the antenna showing the mast, radial connections, and matchbox.*

## Matchbox Design

Feed point impedance of this antenna is literally all over the map as you sweep through the HF bands. The map I'm referring to is the *Smith Chart*, a handy way of displaying complex impedance and much more. It's about the only way to make sense of what's happening and to determine if your matching technique is likely to be successful. In general, we find that the impedance is higher than 50 ohms and also wildly reactive. Also, it's bad enough that the built-in tuner in most transceivers will not succeed. A 4-to-1 impedance stepdown transformer is a reasonable choice, bringing things into range of most tuners on most bands. This same solution was applied in last month's antenna, the off-center fed dipole, which had many of the same issues.

Since this antenna is only intended for use up to 100 W, small ferrite cores were used in the matchbox. A 4:1 transformer is bifilar wound with magnet wire on a 1.4 inch type 61 core which exhibits low loss. A common-mode choke is also required to avoid having the outside of the coax become another radial. I used a 1.2 inch type 31 core wrapped with 12 turns of RG316 Teflon coax. This yields at least 4000 ohms of choking impedance from 7 to 30 MHz, an excellent result. Binding posts provide wire connections. A weatherproof plastic box gives us some peace of mind when it rains. Figures 2 and 3 shows the schematic and a photo of the innards. I ran 100 W continuous through this matchbox into the actual antenna on all bands and there was no significant heating.




L1 4:1 impedance transformer. 12T #18 bifilar on Fair-Rite 5961001201.
L2 Choke. 12T RG-316 on 1.2" type 31 Fair-Rite 2631801202.

*Figure 2. Matchbox schematic.*

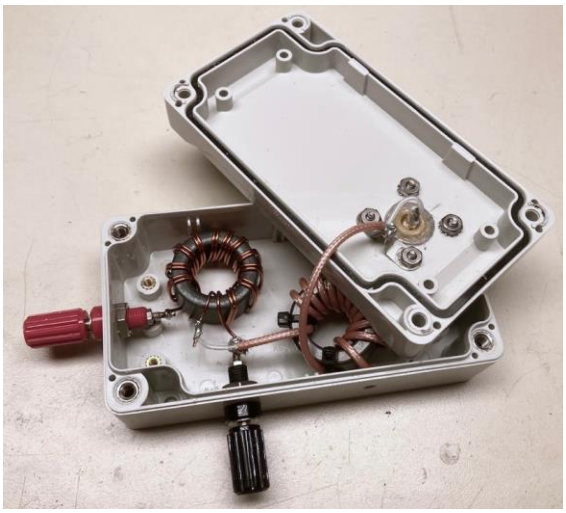


*Figure 3. Matchbox internal construction. The box is 5 x 2.5 x 1.6 inches.*

## Performance

Everybody wants to know if the SWR is perfect everywhere because they mistakenly think that's what makes an antenna "good." But a dummy load has perfect SWR and radiates nothing! What matters most are radiation pattern and efficiency. SWR only has to be within range for your antenna tuner.

One way to estimate efficiency of a vertical is to measure the feedpoint resistance at its fundamental resonance. I did that with my VNA, and found that it was 38.1 ohms at 8.67 MHz. An ideal 1/4-wave vertical over perfect ground would be about 35 ohms, and that represents ideal *radiation resistance*—the place your input power goes to do the work of turning RF current into radiated fields. Since mine measured higher than that we have some loss, in this case 0.7 dB, and it's mainly due to an imperfect radial system which allows some current to flow in the lossy Earth. It turns out that because this antenna exhibits relatively high impedance at its feedpoint, its dependence upon the ground system is relaxed compared to a resonant vertical.

There is also quite a bit of loss in the coax due to the high SWR. I used 40 feet of RG58 and *SimNEC* [Ref. 2] tells me that the worst-case loss between 7 and 50 MHz is about 2.4 dB. Using RG8 reduces that to about 1 dB. Actually, this loss can work somewhat in our favor since it masks the most extreme SWR excursions that might cause our antenna tuner to fail in finding a match. Still, do not be surprised if your tuner fails to match on one or more bands. I found that 17 m was the worst. Table 1 lists the SWR at the matchbox connector and at the end of the coax.

*Table 1. SWR at matchbox and at the end of 40 ft of RG58.*

| Band | At Matchbox | At End of Coax |
|---|---|---|
| 40 m | 7.2 | 5.2 |
| 30 m | 4.6 | 3.7 |
| 20 m | 7.7 | 4.5 |
| 17 m | 13.4 | 5.5 |
| 15 m | 9.8 | 4.7 |
| 12 m | 3.9 | 2.7 |
| 10 m | 2.8 | 2.1 |
| 6 m | 3.5 | 2.2 |

Radiation pattern is of course omnidirectional and at a low takeoff angle. Figure 5 shows the elevation patterns which gain higher-angle lobes on the higher frequencies. This is typical of a vertical that is too long for those bands.

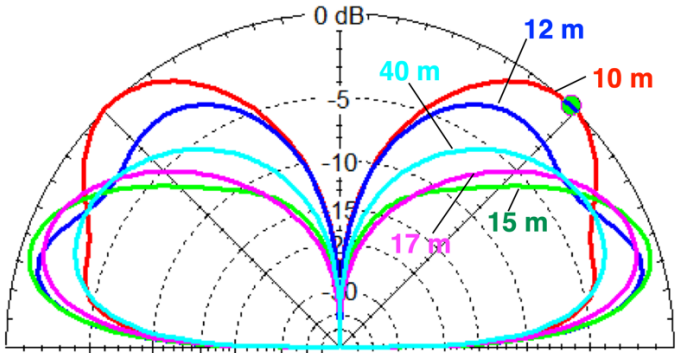



*Figure 4. Elevation patterns. 40 through 15 m are typical single-lobe, low-angle. Higher bands start to have lobes at higher angles. Outer ring is 1.7 dBi.*

## Conclusion

Every antenna is a compromise and those that try to cover a vast range of frequencies are often doomed to poor performance over at least part of their range. In this case, we did ok for such a simple, lightweight kit with no fiddly adjustments. It offers decent efficiency and probably will yield a usable match on all bands from 40 through 6 m. I gave it a try mid-morning running 100 W on CW for all bands and the reverse beacon [Ref. 3] detected me from Hawaii to central America and into Europe, as well as all over North America. Also I got a report from Earl: He managed to set his up for the first time in 10 minutes, and that's without eyes! Not bad. And it fits in your backpack.

## References

1. **Sotabeams** compact 32-foot travel mast. https://www.sotabeams.co.uk/compact-light-weight-10-m-32-ft-travel-mast/

2. **SimNEC** is a free Smith Chart simulator, very useful for all kinds of RF circuit analysis. https://www.ae6ty.com/smith_charts/

3. Reverse Beacon Network. https://reversebeacon.net/main.php

## Club Log Standings 2024

**Overall**

| | | | |
|---|---|---|---|
| 1 | W1SRD | Steve Dyer | 227 |
| 2 | NK7I | Rick Bates | 221 |
| 3 | W6DE | Dave Engle | 229 |

**CW**

| | | | |
|---|---|---|---|
| 1 | K6YK | John Lee | 179 |
| 2 | W1SRD | Steve Dyer | 136 |
| 3 | W6DR | Dave Ritchie | 121 |

**Phone**

| | | | |
|---|---|---|---|
| 1 | W1SRD | Steve Dyer | 123 |
| 2 | K6YK | John Lee | 114 |
| 3 | K6TQ | Dave Sanders | 97 |

**Data**

| | | | |
|---|---|---|---|
| 1 | NK7I | Rick Bates | 215 |
| 2 | W6DE | Dave Engle | 201 |
| 3 | W1SRD | Steve Dyer | 190 |

## Awards Checkers ARRL

Rick Samoian, W6SR

(DXCC, WAS, VUCC, 160M)

## MLDXCC Focus Contests

Northern California Contest Club (NCCC) announced their focus contests at their August 2018 meeting. This list can be found in the Aug 2018 NCCC newsletter.

ARRL RTTY RU
CQ WPX RTTY
CQ WPX SSB
CQ WPX CW

## 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

The following lists all contests in which MLDXCC would appreciate your efforts.

ARRL SS CW/PH
ARRL DX Phone*
ARRL DX CW*
ARRL 10M*
ARRL 160M*
California QSO Party

Click the link below to display upcoming DXpeditions.

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

## 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

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## K6VVA

**Antennas 4 SALE**

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

==========
ANTENNAS (USED)
==========
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/

## ARRL Pacific Division

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## The MLDXCC NEWSLETTER