THE NUGGET

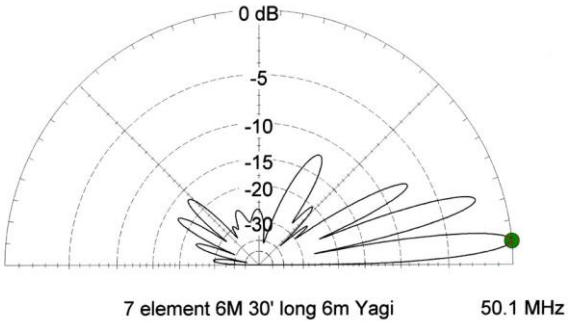
Mother Lode DX/Contest Club

The Newsletter of the Mother Lode DX/Contest Club

August 2023 **Volume 28 Number 8**

Editor's Report

The August meeting of the MLDXCC will be held at Georges in Lockeford on Saturday, August 26. The plan is to have a presentation on using the EZNEC Pro/2 program to design antennas as well as getting an idea how they will perform at different elevations, soil conditions and the interactions with other antennas. If you are interested in taking a look at this program, the software is free. One link is from DXZone. Downloaded it so you can torment the presenters with your questions. de N6JV



Treasurer's Report

MLDXCC Treasurer's Report - July 2023

6/30/2023	Opening Balance	$3,409.07
Income		$0.00
Expenses		$200.00
ARRL Club Insurance	$200.00	
7/31/2023	Ending Balance	$3,209.07

August Meeting

The August meeting foe MLDXCC will be held at Georges in Lockeford on August 26 at 11:30. The presentation will be on using the EZNEC antenna design software.

DELETED COUNTRIES

Manchuria

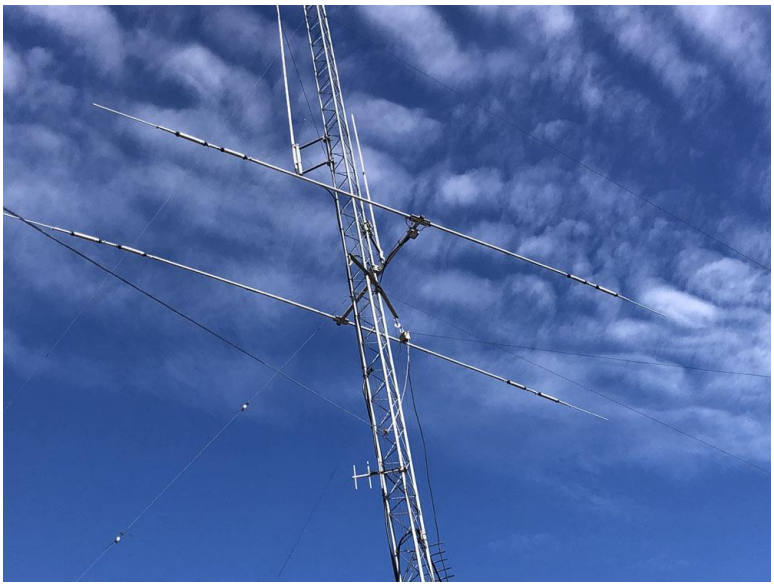
Manchuria contained sixteen northeastern prefectures of what is today the People's Republic of China, the Korean peninsula and the coastal islands. It has been a contended region for centuries, starting as an independent region then ruled by kingdoms of various ethnic groups. Finally the Han Dynasty absorbed the region which then moved down to subsequent dynasties. For a while it became part of the Turkic Empire. The Koreanic speaking population moved from the region into the Southern part of the Korean peninsula displacing the Japonic speaking population. The Liao dynasty became the first to control all of Manchuria. Jurchens were the dominant ethnic group in the region and had contested control from many invaders. In 1616 Nurhaci, a Jurchen chieftain unified the tribes and formed what was to be the Jin Dynasty which later became the Qing Dynasty (1636). If you recall the movie Indiana Jones and the Temple of Doom, at the beginning of the movie the remains of Nurhaci is what professor Jones gave the notorious gangster Lao Che while in Club Obi Wan in exchange for a diamond. Khan Hong Taiji, the founder of the Qing Dynasty, named the people Manju (Manchu). Though the name took the Jurchens never accepted it nor did they call the region Manchuria. The Qing Dynasty actually invaded the south and controlled the whole of China until 1912. It was this dynasty, in 1689, that declared Manchuria part of China proper. In fact, that dynasty is credited for naming the whole of the region China. They were also unsuccessful in keeping the Southern Han Chinese out of Manchuria. Rarely did they mix.

Subsequently the Russian empire conquered Manchuria killing millions of the inhabitants. Those who survived were further reduced by a devastating outbreak of smallpox. The region eventually was divided between China (Inner Manchuria) and Russia (Outer Manchuria). Today the Asiatic coast of Russia is the region formerly known as Outer Manchuria. Vladivostok is the premier city. From 1860 to the early 1900s the Russians industrialized Outer Manchuria including building an extensive railway system that ran through all of Manchuria. In 1904 Russia went to war with Japan over the region. Japan occupied Inner Manchuria and took over the southern branch of the railway system. The Japanese took advantage of the 1917 revolution pushing into Outer Manchuria until 1925 when Russia again exerted dominance over the area. Japan invaded Inner Manchuria in 1931 and established the puppet government of Manchukuo. Japan exploited Manchuria's natural resources which was the principle source of materials used to conduct their war against the allies. It was also their launching point into Southeast Asia. They committed massive atrocities against the people including experimentation far more pervasive than Mengele did in Germany. Briefly, after WWII, Russia attempted to gain control of Inner Manchuria however the Chinese Nationalist Party and the Chinese Communist Party began to fight over the region. The communists won in 1949. The area became the staging point for the Chinese Civil War which resulted in the communist take over of China. Russia did absorb several islands including Sakhalin from Japan after WWII. This was in direct conflict with Sino-Soviet Treaty of Friendship and Alliance which also prevented Russia from turning and invading Japan after Hitler was defeated.

Thanks to the Southern California DX Club Newsletter

New antennas at NC6R:

A rebuilt Hy-Gain TH2MK3 Tribander (10/15/20) @ 40' for DX & Contest work.



Totally rebuilt Hy-Gain VB-64 DX @ 32' feed with 1/2" hardline.

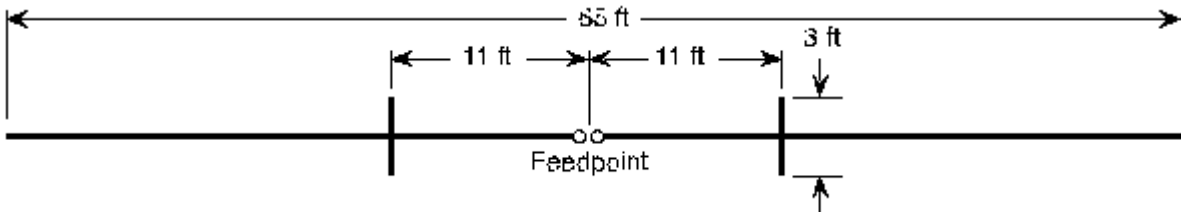
Using a 40m Dipole on 15m With a Better Match

Gary, NA6O

Aug 14, 2023

It's possible to use any dipole on its third harmonic while obtaining a usable match on both bands. This is very convenient, giving you two bands for the price of one, and is attempted most commonly with 40 and 15 m bands (7 and 21 MHz). However, the desired match does not occur exactly at the third harmonic, but rather at a somewhat higher frequency. For instance, a 40m dipole resonant at 7.0 MHz will also be resonant at 21.8 MHz, which is 0.5 MHz above the top of the 15 m band. You'll find that the SWR is near 10:1 within the band, and it's quite possible that your antenna tuner can't match it very well, if at all.

Here is a simple solution that I've been using for many years. All you have to do is add small capacity hats about 1/3 of the way out on each side of the dipole, which is about 1/4 wavelength on 21 MHz. The diagram shows a typical setup. The hats are 3-foot pieces of wire soldered at their midpoints to the main conductor. I use 0.063 inch bronze brazing rod which is available at welding supply stores, but any kind of stiff wire will do. Bend it a little so it forms a bit of an inverted vee, then it won't spin around all the time.



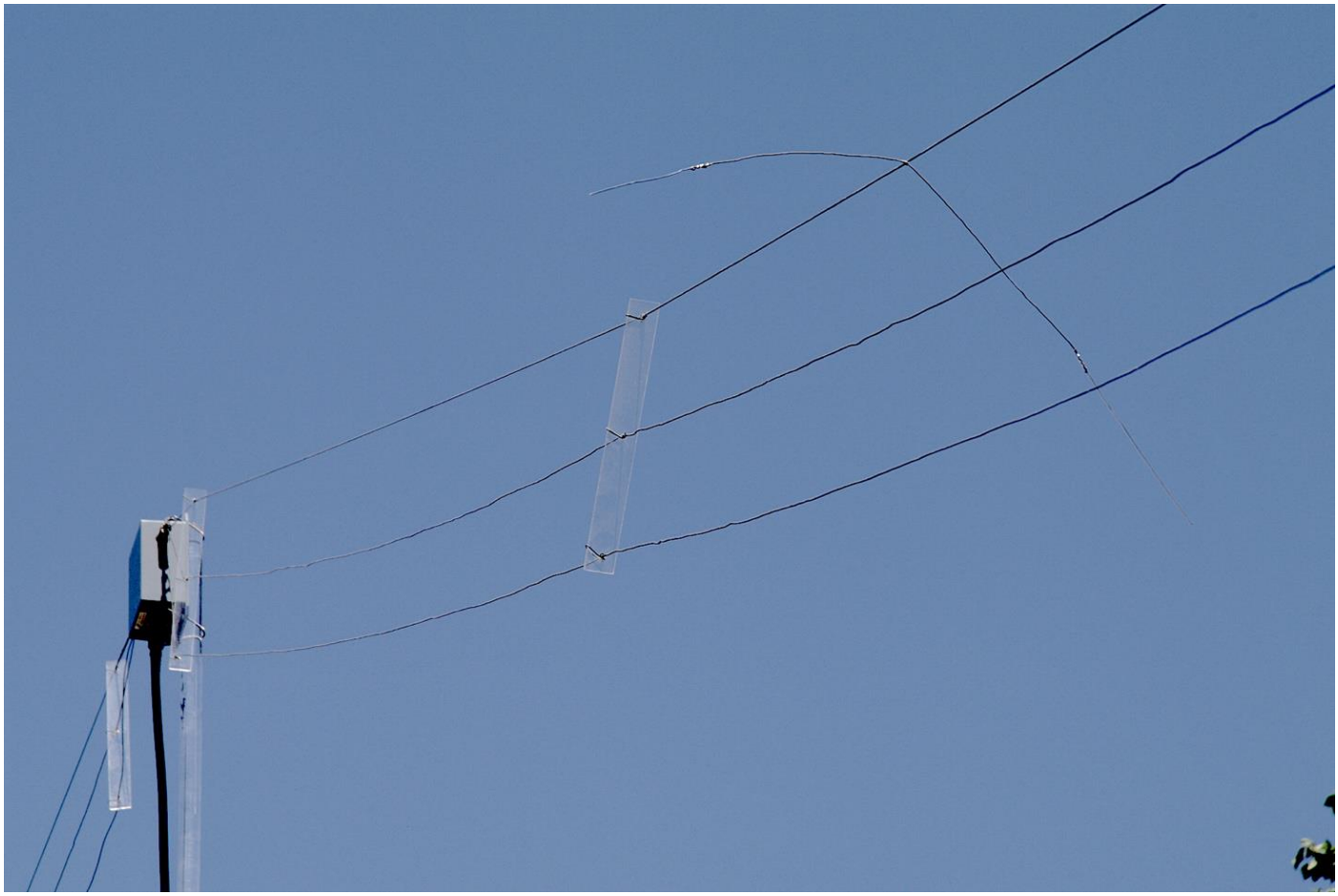
The exact location of the capacity hats isn't too critical. I put them at 11 ft out from the center. Trim the overall dipole for resonance on 40 m, then check it out on 15. If you want to further refine the resonance on 15 m, you can trim the length of the hats. The tuning rate is about 85 kHz per inch. Changing the hats will also slightly affect the 40m resonance, about 12 kHz per inch. In the end, you will easily cover the whole 15 m band with a reasonable SWR. It will be far better than without this trick!

I should also mention that the radiation pattern on 15 m is quite complex since it's no longer a simple 1/2-wave dipole (the hats have nothing to do with that fact). Peak gain is actually greater than a dipole but there are also many nulls.

The photo shows my original installation on a low-observable 4-band fan dipole (40, 30, 20, 15 m). I used 18 AWG solid wire for the hats in this case and actually spliced some on because it was a first experiment.

Has this been published elsewhere? Yes, in the June 1991 QST it was mentioned in a general article about dipoles by NJ2L. Sadly, it's never made it into the ARRL Antenna Handbook... If you want to try simulation with EZNEC or some other tool, this makes a great exercise. Speaking of simulation, I wondered if this method would work on an 80 m dipole, making it usable on 30 m. It will, however the

hats are about 9 feet long. Perhaps this could be implemented with wires pulled out via insulators and string. Further simulation and experimentation is in order here.



Tube of the Month

4CV1500B

In the first few years of using vacuum tubes for transmitting, there developed a definite arms race for more power. Large glass envelopes were only able to handle a limited power, so it wasn't long before they started building water cooled tubes. Pumps and radiators were well known technologies. Problems occurred when too much heat was being generated when the circulation of water wasn't evenly distributed around the anode and "hot spots" developed. The water boiled and damaged or destroyed the tube. The water had to be limited in temperature of 70º C and cooled down to about 40º C before injecting it back into the tube. The process required lots of hardware, pumps and fans.

Using steam for cooling was well known and in 1949, a French engineer working for Thomson, built a tube with heavy, solid fins that could be inserted into a boiler to produce steam. This process is 5 times as efficient as water cooling. I don't have information on how popular, except in France, this technology was, but in the mid 1960's, EIMAC began experimenting. Based on only a few fossils, it appears to me that they were interested in making small vapor cooled tubes for the hams and very large tubes for broadcasting and industrial heating.

An expermental triode was constructed to test the concept. It looks like it's based on one of the 3CX15,000 family mounted in a copper boiler with a window to look inside. The massive anode would boil water but wouldn't be susceptible to hot spots. Everything should stay at 100º C. This may have been a prototype resulting in the 3CV30,000A3 of 1963.

4CV1500B

EIMAC chose their new 4CX1500B/4CW2000A that had been so successful with its focused cathode technology to test the new tube concept. The anode had heavy fins welded on it and a can to contain the water and steam was added. The technology would work with any tube, but this size was standard for several tubes of this class. The designation 4CV1500B was chosen. The guys at EIMAC liked to build amplifiers, so a new amplifier using this tube was made that incorporation a condenser panel and a water reservoir. The new amp was featured in an article written for the May, 1966, issue of QST called the "Stanley Steamer". This copy is of EIMAC's "Amateur Service Newsletter Nr. AS-28". I have never found a data sheet for this tube although the specifications for the 4CX1500B are the same. There is no evidence that this tube

was commercially manufactured as few examples exist. An additional tube was constructed based on the 3CX1000A7 and designated it the 3CV1500A7. This tube was used in the Ehrhorn Alpha Seventy PA70-V. The selling point was that the amplifiers made no noise. The ham line is history, but the commercial and industrial tubes are still in production. The largest of these tubes is the 4CV250,000B.

Norm N6JV (Department of Thermonic Paleontology)

N6JV.com (Museum)

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Club Log Standings 2023

Overall

1	W1SRD	Steve Dyer	231
2	K6OK	Jim Varney	215
3	W6DE	Dave Engle	213

CW

1	K6YK	John Lee	187
2	K6OK	Jim Varney	131
3	K6IJ	Brian Mathews	124

Phone

1	K6YK	John Lee	129
2	K6IJ	Brian Mathews	120
3	W1SRD	Steve Dyer	114

Data

1	W1SRD	Steve Dyer	211
2	W6DE	Dave Engle	196
3	W6DR	Dave Ritchie	193

Awards Checkers ARRL

Rick Samoian, W6SR

(DXCC, WAS, VUCC, 160M)

Postal Increase

Product	Price before Jan. 22	Price after Jan. 22
Letters (1 oz.)	60 cents	63 cents
Letters (metered 1 oz.)	57 cents	60 cents
Domestic Postcards	44 cents	48 cents
International Postcards	$1.40	$1.45
International Letter (1 oz.)	$1.40	$1.45

MLDXCC Focus Contests

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

Seventeenth Annual

Sacramento Valley

Hamfest!

Hi-Tech

Liquidators

Saturday, Sept 16, 2023

0700 to 1200 Hours

Presented by Western Placer Amateur Radio Club

65 McBean Park Dr. (Hwy. 193) Lincoln CA

Bandstand Parking Lot

Lots of Good Stuff!

Drawing Prizes!

Vendor Setup 0600

Buy and Sell

Ham Radio Related Stuff Only

No Inflation - Same price every year!

$10 per space-Approximately 9' x 12'

Bring Your Own Tables

Hamfest Info at WWW.WPARC.US

Talk-in Frequency
147.300 (+) 67 Hz

"Hello"...

Please Support Our Sponsors

*Proposed and approved at the November 12, 2016 MLDXCC general meeting.

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-forecast

Upcoming Events

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

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

South Bay Swap Meet

The Electronics Flea Market will be on Sunday, September 10, 2023. The location is parking lot 3 at West Valley College in Saratoga: West Valley College 14000 Fruitvale Ave Saratoga, California 95070. Parking=$3.

The hours are from 6:00 am until 12:00 Noon.

PACIFICON℠ 2023
October 20-22, 2023

San Ramon Marriott
2600 Bishop Drive
San Ramon, CA 94583

Upcoming DX and DXpeditions

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

2023 Meeting Dates

June 17, Shingle Springs
July 22, Shingle Springs
August 26 Lockeford
September 16

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

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