

# THE NUGGET



Mother Lode DX/Contest Club

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

January 2021

Volume 26 Number 1

### **From the President – NC6R**

Greetings MLDXCC members, how's everyone doing so far in 2021?

Have you been working DX or logged "an all-time new one"? While not exactly DX, I'm one state short (Wyoming) of WAS on FT4. While I still prefer SSB, I do find quite a bit of activity on the FT8/FT4 modes. It seems there is always someone there to work.

Have you been able to avail yourself to our online Zoom meetings? I see a good number of attendees logging in from various locations. We continue to have quality speakers on various subjects. Thank you W1RH for arranging our latest presentation which was on the VP6R Pitcairn expedition.

HF band conditions continue to improve with the solar cycle on the upswing. This is great news for both DX and contest operators.

With the 2020 CQ Marathon in the books, once again MLDXCC as a club continued to improve. Sadly we just missed being listed in the top #5 clubs worldwide; let's make that a goal for next

year. Thank you to Bob, N6TCE for stepping up and being our cheerleader for the Marathon.

A project that I presented during our November meeting was the collection of "ham speak" phrases. During the first ever MLDXCC meeting I attended there was talk about CQP. What the heck is that? It took me awhile to understand that they were referring the California QSO Party. Another mystery voiced by a newer club member is "what is 3830"? My goal is to assemble a document of phrases which will then be accessible through our website. As of this writing several of you have submitted good suggestions. If you've a phrase that you think would be helpful to a new operator, please send it (them) to me at [nc6r4dx@gmail.com](mailto:nc6r4dx@gmail.com).

As always, here are websites to view upcoming contest and DX announcements -

Contest calendar dates are listed at - <https://www.contestcalendar.com/index.html>

DX operation announcements can be found at - <https://www.ng3k.com/misc/adxo.html>

73 & good DX,

**From the V.P. - W1RH**

Well, this Covid19 thing keeps dragging on and on and I'm really looking forward to getting back to our regular restaurant lunch meetings. Hopefully it will be in a few months. I know President Steve certainly agrees, as to all of you.

The Zoom meetings have not been a bad thing. Using Zoom, and now with MLDXCC having our own Zoom account, has allowed us to bring in premier speakers from outside the area. It has also given our members, who live outside of the core Mother Lode Foothills area to participate in the meetings.

I've been getting the equipment together to continue Zoom meetings once we get back into the usual monthly lunch meetings at local restaurants. Assuming we find venues with good internet speeds, we should continue to bring in premier speakers from out of the area, projecting them on a screen at the restaurant as well as making the presentations and business meetings available to our members outside of the core area.

Our January meeting featured Pat Cain, K0PC, with a great presentation on the 2019 Pitcairn Island DXpedition. If you were not among the 43 in attendance, you really missed a good meeting. Just as we do with our in-the-flesh lunches, we had some super conversation prior to and after the presentation. It was really nice to be able to chat with some of our distant members such as Alan (AD6E), who was at his Maui QTH, Rick (N6XI), Ken (K6MR), Andy (AE6Y), Rick (NK7I) in Idaho, Martin (AA1ON)

from his Massachusetts QTH, and Barry (K6ST). Ed, (W0YK) also joined us.

We do not have a meeting planned for February, which is nearly always the case, due to the heavy weekend contest load during the month, but we will have a meeting on March 20<sup>th</sup>. This will be a Zoom meeting and, hopefully, meetings after that may be at local restaurants.

I know many serious DX'ers and contesters are familiar with Rob Sherwood's, Sherwood Engineering, Inc., receiver testing lab along with some of his kits and products. Rob's receiver performance chart is always being updated, and that should be our topic for the March meeting. His current chart, as of December 30<sup>th</sup>, appears below.

<http://www.sherweng.com/table.html>

Device Under Test	Noise Floor (dBm)	AGC Threshold (uV)	dB	100Hz Blocking (dB)
<i>LO Noise Corrected</i> 05/10/19 Yaesu FTdx-101D	-127 -136 <sup>b</sup> -141 <sup>6</sup>	4.5 1.6 <sup>b</sup> 0.58 <sup>a1</sup>	3	>147
<i>Added 9/29/14</i> FlexRadio Systems 6700 Hardware Updated	-118 -135 <sup>b2</sup>	3.0 1.0 <sup>b2</sup>	Var	130 preamp Off
<i>Added 12/30/20</i> Yaesu FTdx10	-126 -135 <sup>b</sup> -140 <sup>6</sup>	4.2 1.46 <sup>b</sup> 0.54 <sup>a1</sup>	3	141
<i>Added 02/11/18</i> Icom IC-R8600 Second sample S/N 02001177	-131 -142 <sup>b</sup> -130 <sup>ab</sup>	2.40 0.67 <sup>b</sup>	3	125
<i>Added 11/10/15</i> Elecraft K3S	-135 -138 <sup>b</sup> -145 <sup>10</sup>	1.5 0.45 <sup>b</sup>	3	150
<i>Added 3/17/17</i> Elecraft K3S 2nd Sample 10 meter data	-135 -138 <sup>b</sup> -145 <sup>10</sup>	1.5 0.45 <sup>b</sup>	3	150
<i>Added 02/23/15</i> Elecraft K3 (RX Gain Recal) New Synthesizer	-136 -139 <sup>bq</sup>	1.0 0.3 <sup>b</sup>	3	141

<i>Added 04/25/16</i> Icom IC-7851	-123 -135 <sup>b</sup> -141 <sup>b1</sup>	8.5 1.83 <sup>b</sup> 1.16 <sup>b1</sup>	3	149
<i>Added 10/15/18</i> Kenwood TS-890S	-131 -140 <sup>b</sup> -141 <sup>f</sup>	2.1 0.53 <sup>b</sup> 0.14 <sup>b1</sup>	3	>151
<i>Added 10/02/17</i> Hilberling PT-8000A Hardware Rev 2.00	-128 -141 <sup>b</sup>	5.4 1.0 <sup>b</sup>	3	142
<i>Added 08/10/12</i> Elecraft KX3	-123 -138 <sup>b2</sup>	12 1.3 <sup>b2</sup>	3	138
<i>Added 02/22/18</i> Apache ANAN-7000DLE	-131 -131 <sup>ad</sup> -140 <sup>f</sup>	1.0 adjustable 2.2 <sup>ae</sup>	3	126
<i>Added 12/01/10</i> Yaesu FTdx-5000D	-123 -135 <sup>b</sup> -141 <sup>b1</sup>	4.6 1.2 <sup>b</sup> 0.33 <sup>b1</sup>	3	127 <sup>e</sup>

Bob W1RH

## Next Meeting

**Date:** March 20<sup>th</sup>

**Time:** TBD

**Location:** Zoom

**Presentation:** Sherwood Engineering

## MLDXCC Treasurer - K6SZQ

Hey y'all - it's Sue your friendly MLDXCC treasurer. Just a reminder that 2021 dues are due - \$20 for an individual and \$30 for a family membership. That's just 5 ½ cents a day, or \$1.67 a month to support the best DX and Contest Club around! That's cheaper than adopting a shelter animal or supporting a child in a third world country.

You can pay dues easily by:

- PayPal – Send to:  
[MotherLodeClub@gmail.com](mailto:MotherLodeClub@gmail.com). Use the Friends and Family option.
- Cash or Check - Given to a club officer at a meeting. Or
- Mail to the Treasurer - Sue Allred K6SZQ,  
17610 Red Mule Rd. Fiddletown, CA 95629

## MLDXCC Treasurer's Report - December 2020

11/30/2020	Opening Balance	\$1,936.98
	Income	\$80.00
	2021 Dues - Paypal	\$60.00
	Donation to club - Paypal	\$20.00
	Expenses	\$0.00
	none	
12/31/2020	Ending Balance	\$2,016.98

## 2020 MLDXCC P&L

Income	2020 Dues Collected	\$1,154.12
	Badges	\$100.00
	Donations (dues paid twice)	\$20.00
		\$1,274.12
Expenses	P.O. Box Rental	\$56.00
	Donation to VP8PJ Dxpediton	\$500.00
	NCCC - QP Plaque Sponsorship	\$50.00
	ARRL- RTTY Roundup Plaque Sponsorship	\$80.00
	Sign-tek - Awards	\$660.33
	Stamps	\$11.00
	Arnolds - Badge Order	\$119.53
	ARRL Club Insurance	\$200.00
	Donation to NCDXF	\$250.00
	Zoom Subscription	\$112.43
	Anniversary Pins	\$56.95
		\$2,096.24

\*\* This includes 2020 dues that were received in late 2019. It does not include 2021 dues received prior to 12/31/20

## **From the Secretary - KI6YYT**

### **MLDXCC January 23, 2020 Meeting Notes**

By Secretary, Emilia Seiferling, KI6YYT

The attendance was 43 people on the Zoom meeting with 5 checking out after less than 13 minutes.

John, AC6SL, showed slides of his recent trip to Pitcairn Island. It was a personal trip, not a Dxpediton.

President Steve, NC6R, was unable to attend the meeting.

Treasurer Sue, K6SZQ, reminded everyone that membership renewals are due. Directions are in the newsletter concerning payment options. The treasurer reports for Nov. and Dec. were approved. Final balance was \$2016.98.

Bob, N6TCE, gave a propagation report.

The presentation was by Pat, K0PC, on the "VP6R - Pitcairn Island Dxpediton - 2019". The highlights of the presentation were; #67 on most wanted list, 37 people live full time on the island, wanted to feature 160 M, budget \$126,000, ran 4 stations, 82,223 total QSO's, 41% - CW, 30% - FT8, 28% SSB, made antipodal contacts on 160 M.

The next MLDXCC meeting is March 20, 2021. The program will be presented by Rob Sherwood of Sherwood Engineering.

## **CLUB Dues**

### **2020 dues are due!**

The Dues period runs from Jan 1 to Dec 31. Dues are \$20.00 individual, \$30.00 family

PayPal – Send to: [MotherLodeClub@gmail.com](mailto:MotherLodeClub@gmail.com). Use the Friends and Family option.

Cash or Check - Given to a club officer at a meeting. Or mail to the Treasurer - Sue Allred K6SZQ, 17610 Red Mule Rd. Fiddletown, CA 95629

## Club Log Standings

### Overall

1	NJ6G	Dennis Moore	119
2	WU6W	Rick Palio	77
3	K6YK	John Lee	58

### CW

1	K6YK	John Lee	51
2	K6IJ	Fred Honnold	15
3	WU6W	Rick Palio	12

### Phone

1	NC6R	Steve Allred	27
2	WU6W	Rick Palio	5
3	K6TQ	Dave Sanders	5

### Data

1	NJ6G	Dennis Moore	119
2	WU6W	Rick Palio	72
3	N6TCE	Bob Officer	57

*Club Log Standings are based on worked entities during the calendar year.*

## In the news

### Dayton Hamvention canceled

The 2021 [Dayton Hamvention](#)<sup>®</sup> has been canceled. Their reasoning is that vaccines have been delayed beyond what was predicted. Tickets that had been deferred from last year will be deferred again, and will be usable in 2022.

## Member Reports

### DXCC!

Just wanted to announce I got my 100th

confirmation on LOTW for my DXCC!! I only had around 50 in June, so I've been able to double my confirmed countries in just over 6 months of having my tribander in the air.

Thanks,  
Brian W6BRY

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### ST2NH Sudan 20m FT4

I'm in shock, he popped up out of nowhere and I got him on the third call. ATNO and zone 34.

73, Dennis NJ6G

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### DX Marathon initial claimed high scores

According to the initial claimed score report, we didn't make it into the top 5 club scores for 2021. However, we'll have to wait until June 1<sup>st</sup> for the official scores to be released. We made a valiant effort and added thousands of points over the 2019 score.

<https://www.dxmarathon.com/highclaimedscores/2020HighClaimedScores.htm>

TOP 5 CLUB SCORES	
Name	Score
CDR GROUP (Brazil)	10,746
Rio Dx Group (Brazil)	7,449
Northern Illinois DX Association (USA)	7,359
Western Washington DX Club (USA)	6,386
Araucaria DX Group (Brazil)	5,733

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### N6JV STATION REPORT

In the first week in January, conditions off the Moon on 2-meters were good. QSOs were completed with 9A5RJ, F5AQX, G4TRA, HA6NQ, HA8CE, I3MEK, IK6CAK, IK7EZN, LZ2FO, OK1UGA, S51ZO, SV6KRN, UR3EE and YL2GD. The totals are 34 QSOs with 21 countries. When I started on 2-meters, I was told

that I could only work large stations with my 14 element LFA beam. Working the big stations is fun, but my last QSO was with G4TRA who has 11 elements without elevation and 400 watts. With that setup, he is near DXCC on 2. It is interesting to see what some of the 2-meter EME stations are using. Here are a couple stations that were worked. The first is IK6CAK who likes to use aluminum ladders as structural elements. SM2BYC has 16 antennas like mine in four banks of four.



N6JV

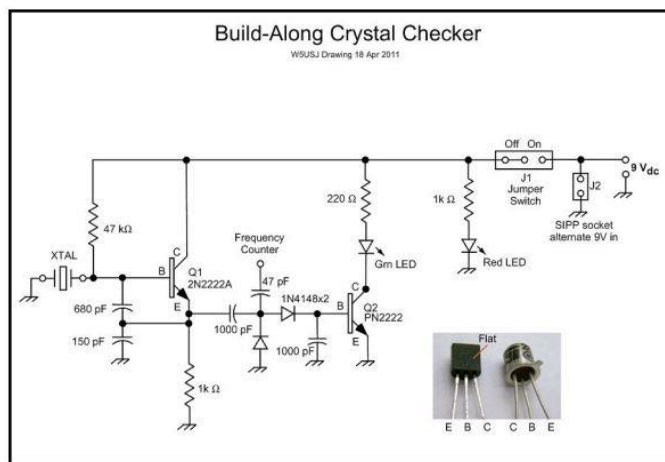
### Doug's Crystal checker project

I have a small collection of crystals of unknown frequency. I wanted to figure out what frequency they were on, so I could use some in a tube transmitter that I built. After doing a little research I came across the QRPme site, and saw that they had some fairly easy to build plans for a Crystal Checker. <http://qrpme.com/>

The one I built is based on the QRPme Crystal Checker 2011 Build-Along.

This project allows you to test the crystal for "activity" and hook up a frequency counter to measure the fundamental frequency.

It is a fairly simple project and I had all of the parts and components in my junk box.



The circuit is a Colpitts oscillator with generic component values that allows it to oscillate over a wide range of the HF spectrum. That is followed up by a peak detector made by two diodes and a 1000pf capacitor. If the crystal is good, the green LED lights up.

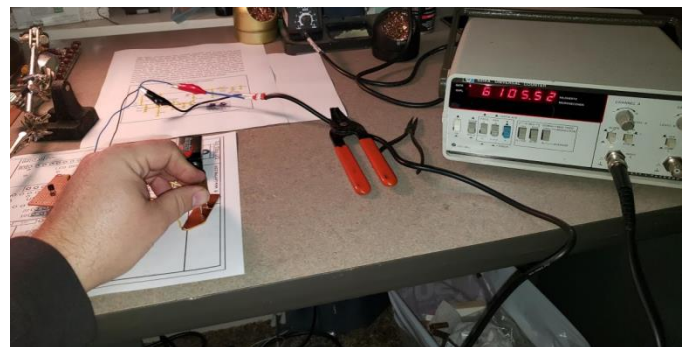
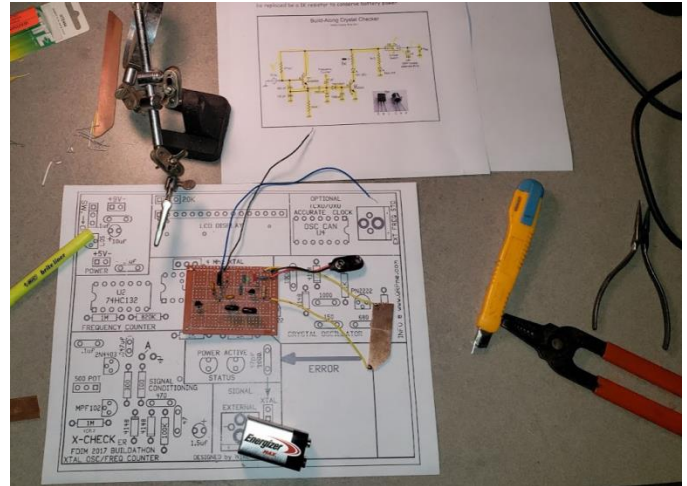
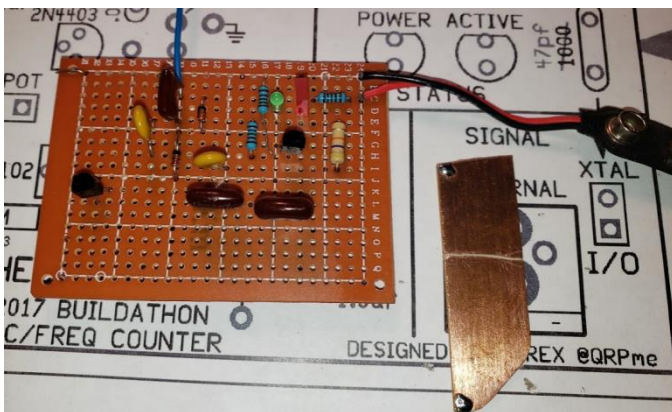
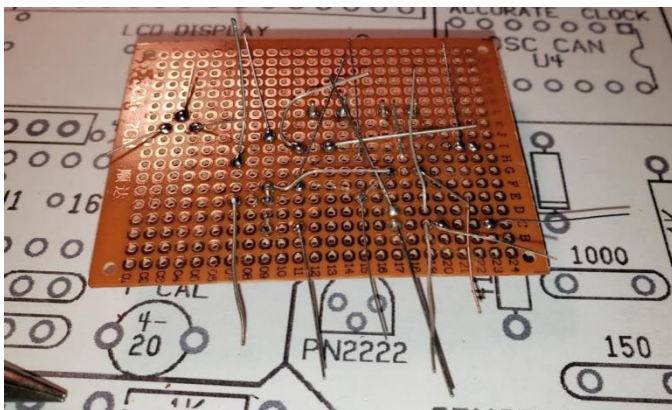
All you need to do I hook it up to a battery, connect a frequency counter, then press the crystal terminals to the copper pad and it lights up green if the crystal has

activity, and shows the frequency on the frequency counter.

This project would also allow you to rapidly test the frequency of a crystal that you were grinding to a different frequency.

QRPme offers a kit for \$50 that includes a frequency counter and LCD, but I wanted to build the simpler version. With very few parts, this only took about 2 hours to build.

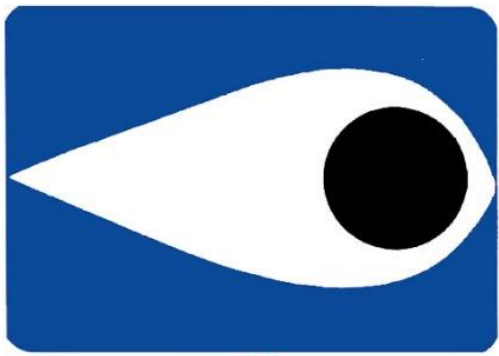
<https://www.qrpme.com/docs/BAK%20Instructions.PDF>



Doug WE6Z

The El Dorado County Neighborhood Radio Watch Program

By: Bob, W1RH



**NEIGHBORHOOD  
RADIO WATCH**

**WE LOOK OUT FOR EACH OTHER™**

Let me start by saying that his article has absolutely nothing to do with DX'ing or contesting but it has everything to do with radio.

Alan, W6WN, owns a company called El Dorado Networks. His company specializes in both commercial and residential satellite internet service. In early November, 2018, he was called by T-Mobile to join a team of technicians who would restore temporary internet service to the Paradise and surrounding area which was devastated by the disastrous Camp Fire. Alan arrived on scene a day or so following the fire and witnessed the devastation with his own eyes. I do believe it changed his life.

In the following year, Alan began giving presentations, to anyone who would listen, on just how communications broke down during the fire, arguably resulting in many of the 85 casualties. The fire, in insurance terms, was the most expensive natural disaster in the world and the most devastating wild fire in California history.

Alan gave one of his first presentations to his home club, the El Dorado County Amateur Radio Club. The presentation was absolutely compelling, with Alan

showing many pictures of the destruction and featuring a time line, minute by minute, on how the fire raced through this part of Butte County. Since then, Alan has probably given his Camp Fire presentation to nearly 100 groups. If you haven't seen it, it's still worth watching.

The heart of Alan's presentation centered on how the communication broke down. This included problems with Code Red (evacuation notifications), internet sites down, landline and cell phones down, and the Emergency Alert System failing to notify residents. At the very end of the presentation, Alan suggested that the General Mobile Radio Service band, which allows repeaters, could be a way for local residents to communicate during such an emergency, via 2-Way Radio, when all other means of communication fail.

After the meeting, Alan stopped me as I was walking out. I happen to be the trustee (AG6AU) of the extensive EDCARC repeater system, which includes two 2-meter repeaters, eight 2-meter voting sites, a 6-meter repeater, a 440 MHz repeater, a 220 MHz repeater and two 900 MHz repeaters. All but the 220 MHz repeater and one of the 900 MHz repeaters are linked to the main 2-meter system. The result is extensive coverage for both mobile and hand-held radios in the Western Slope of El Dorado County.

Alan's comment to me was regarding developing a GMRS repeater system for the County. I was initially quite opposed to the idea and I suppose that's because we're a ham radio club and ham radio uses frequencies in the Amateur Radio Service. The more Alan pressed me, however, the more I began to warm up to the idea.

Totally apart from Alan's mission, I had begun my own mission, after retiring from CBS, which was to get involved in the El Dorado County Fire Safe Council. The County Fire Safe Council is a well-organized group which oversees 25 Associate (Local) councils in the County. Each Associate Council



serves one of the communities in the County. When Alan presented the idea to me, and after I warmed up to it, the thought occurred to me to build GMRS repeaters, operated by the El Dorado County Amateur Radio Club, for the various Associate Fire Safe Councils in the County.

Alan then began giving his Camp Fire presentation to the Associate fire safe councils in the County and beyond. This included the Coloma-Lotus Fire Safe Council. Alan began following up with a second presentation titled "Radio For the Rest of Us". This presentation went into detail on how use of the Family Radio Service (FRS), the GMRS frequencies and the Amateur Radio Frequencies could all be used when all other means of communication fail.



Since I live in Lotus, which is covered by the Coloma-Lotus Fire Safe Council, and I live on a mountain which looks over nearly the entire area serviced by this fire safe council, it was easy for me to build a repeater at my QTH. I put the antenna on the highest of the two towers at my QTH and coverage of the community was just excellent



Soon after we built this repeater, we were asked by the Oak Hill Fire Safe Council to build out a system for their community. By this time, we had several members of EDCARC active in this project. We built out a vehicle, owned by Colton, WD6CWM, which included a portable GMRS repeater and 30-foot mast. This was, and still is, being used to test coverage of future repeater sites. For Oak Hill, and after testing several sites, we decided on a Fire Safe Council resident's mountain top home for our repeater location. Like my own QTH, this home had an auto-start generator. We mounted the antenna on a storage container and had the repeater in an adjacent well pump building.



Once we had these two repeaters operational, we had to figure out just how to get the locals to make use of them, and that included how to get a radio and how to use it.

I want to note that all of the repeaters we have built have been donated to EDCARC with most being small Motorola units operating with about 35 watts of power. The repeater antennas, all built for land-mobile service, have also been donated to the Club.

Alan asked me to be his partner in the “Radio For the Rest of Us” presentation, and we have since given this presentation to groups all over California and beyond. One of the first groups we gave this presentation to was the Coloma-Lotus Fire Safe Council. The room was packed with local residents and we knew at that point that this idea of Alan’s might just work.

After that meeting, a woman came up to me and asked me what I thought about the idea of using sirens to notify residents of a fire in the area, just as sirens are used in the Midwest to notify local residents of a tornado. My response was that while this makes sense, I seriously doubted that anything like this would be adopted in El Dorado County. This idea is now being kicked around, however, for some California counties.

The siren idea did trigger a thought I had to notify residents of a local fire via Motorola Quik-Call II paging protocol, otherwise known as 2-Tone paging. I started looking into commercial radios that might have the ability to decode this Quik Call II alerts and, sure enough, most commercial land mobile radios have this capability. In the meantime, Alan, in his talks, had been promoting the Midland GMRS radio line of products along with some of the Chinese radio products. None of these have the ability to decode 2-Tone alerts. Affordable radios, however, retired from public safety and business services, could be purchased used at quite reasonable costs, generally lower than some of the new Midlands. These included radios manufactured by Motorola, Vertex, Tait, Kenwood, Icom, and others. They’re also type-accepted by the FCC for commercial service. Alan immediately took the reference to the Midland and Chinese radios out of his presentations and focused on the commercial land mobile used radios. I bought a Vertex VX-180 and a Kenwood TK-380, both well under \$100 and tested the paging alert capability. In short, they worked great, and this became the heart of our Neighborhood Radio Watch program. A few of us in the program have purchased these radios in bulk, programmed them, and made them available to users at our cost.



The program has grown quite a bit since we first began. We now have four repeaters in El Dorado County and neighboring Amador County borrowed our idea to develop a GMRS repeater for the Fiddletown area, with the repeater located at Steve's (NC6R) excellent QTH.

Working together with the local fire safe councils, we began regular weekly nets to get the locals familiar with their radios and as word got out on what we were doing, more and more local fire safe councils approached Alan or me for a repeater to serve their area.

With fast growth, however, can come problems. One fire safe council asked us for a repeater and we agreed to build it. At this point, however, a local fire chief heard about the idea and all hell broke loose, with the fire chief complaining to those in high places. In so many words, his complaint was that we were a bunch of hams who didn't have a clue what we were doing; we could get in the way of legitimate

information distribution and deliver false evacuation notices. We immediately put a halt to construction of this repeater and regrouped. It got worse, however. In early 2020, the County Fire Safe Council, which oversees the local fire safe councils, advised their local councils that they should not affiliate with the Neighborhood Radio Watch programs until further notice. Their concerns were similar and related to liability. While I was furious when I first heard about these concerns, looking back I can see their points and I do believe that these two issues resulted in some significant improvements to our program.

As President of EDCARC, I told our group that we were putting a stop to all expansion until further notice. Ironically, this did not sit well with many of the local fire safe councils that had requested repeaters and we also had members of our club unhappy with this decision. While we continued to operate the Coloma-Lotus and Oak Hill Neighborhood Radio Watch programs, which were by then loosely tied to the two local fire safe councils, Alan and I needed time to figure out how to fix this. The answer came to me in the middle of the night: Create a Neighborhood Radio Watch Advisory Committee, composed of key radio club members, fire safe council representatives, first responders, and members of law enforcement.

The Coloma-Lotus group, which by then was quite active with nearly 50 radio users, had all of the essential components of an Advisory Committee: a recently retired CalStar nurse and volunteer fire fighter, two law enforcement officers, a member of the Red Cross, a CERT member, a Search and Rescue member and the Chair of the Coloma-Lotus Fire Safe Council. We have since had one key El Dorado County Sheriff OES officer join the Advisory Committee and we expect to further expand it to include a representative from each of our Neighborhood Radio Watch programs.

At this point, the El Dorado County Neighborhood Radio Watch has about 150 radio users. There are four operational repeaters and we have plans to build out three more repeaters prior to fire season. In addition, the Advisory Committee has built several training modules and we have been conducting training via Zoom sessions. These Zoom sessions generally have anywhere from 60-100 in attendance, so you can see that interest in the program has really grown.

Our training modules consist of everything from an introduction to the Neighborhood Radio Watch, how to use and purchase radios, net operations, advanced net operations, scanner use, and training on the Incident Command System, which is based in part by some of the excellent work done by the Amateur Radio Emergency Service and EMCOMM.

We have established our two-tone paging alerts in two of the four programs. We have very strict guidelines on just what constitutes when to issue an alert. In the case of fires, this would mean a confirmed significant fire event. "Confirmed" meaning that a fire call was heard on the scanner, followed up by the first engine on scene verifying the event is significant. In Coloma-Lotus, we had four events this past summer that required the paging alert. In all cases, the alert was issued within 5 minutes after the fire was reported by El Dorado County fire dispatch.

So far, we only have three in the County authorized to issue an alert. We're requiring participation in all of our training modules for someone to qualify to issue an alert, up to and including understanding of the Incident Command protocol. Only very few land-mobile radios have the ability to encode a 2-tone alert, and programming this ability into a radio is not easy.

Alan has encouraged our programs to recruit radio users who have commanding views from their location. He refers to them as "Falcons" and this has

proven to work out well. In Coloma-Lotus, we have four "Falcons" who are radio users and they have already proven to be quite helpful in reporting fires. The shot, below, is from my own location.



Most radio users keep their radios in the "paging" mode, which mutes them 24/7 until an alert is issued. Once we issue an alert, a net control station comes on the radio followed by other radio users assigned to monitor various sources for credible information we can safely give out to our users. This includes fire progression, road closures and even evacuation alerts. Regarding the latter, we will only relay an evacuation alert issued by the El Dorado County Sheriff's Department. We stress with our users that we do NOT issue evacuation alerts but, if an alert is issued by the El Dorado County Sheriff's Department, we will relay it. There has been some interest on the part of the Sheriff's department to actually give them the ability to alert user radios as just another way to get an evacuation alert out, supplementing Code Red, phone calls, and officer with a megaphone, etc.

We currently have about 150 GMRS radio users in El Dorado County. With the formation of the Advisory Committee, the credibility we may have lost in the past has been overturned by the formation of this committee. We're now building out new Neighborhood Radio Watch programs and expect to

have about 300 radio users on-line by the end of the summer.

We have learned a lot from both our mistakes and from our actual non-ham radio users. Breaking away from any official affiliation with the fire safe councils actually makes a lot of sense in that radio waves don't necessarily follow political boundaries. It makes much more sense to place a repeater that covers several adjacent communities rather than to build one repeater for each community. For instance, we have had four fire safe councils in the Pollock Pines area request Neighborhood Radio Watch programs. By strategically locating a repeater, we can serve all four communities with a single repeater. Our County OES Advisory Committee member completely agrees with this, adding that any fire in the Pollock Pines area could affect all four communities and it only makes sense to have a common source of information via the Neighborhood Radio Watch.

One thing that I never ever thought would happen is that we have found that many of our GMRS users have gone the extra step and have obtained Amateur Radio licenses. Also, we have found many inactive hams via the Neighborhood Radio Watch program who have since become active again. The result has been a huge growth in membership in the past year for the radio club.

We have also had some significant offers to donate funds to the Neighborhood Radio Watch program and this has required the El Dorado County ARC to make a decision to incorporate and form a 501C3 non-profit arm so we can accept donations. The donations will assist in our expansion, cover new repeaters and perhaps actually pay for user radios. Incorporation can also help us to obtain future grant money.

We have found that the UHF GMRS band, with a repeater strategically placed, results in about 90% of the users being able to use hand-held radios. The

remaining 10% must resort to base station radios with outdoor antennas. The popularity of the paging alerts is the primary reason why the program has grown so fast, so we're also looking into using VHF channels for one-way pocket pager use.

Experiments on the MURS band (similar to GMRS but on VHF channel without repeaters and requiring greatly reduced power) have yielded amazing results with 2 watts of power. Users pagers, like the Motorola Minitor III, below, can be purchased used for around \$15-\$25.



The GMRS band is kind of like CB on steroids. There is no official repeater coordination and there only 8 repeater channels. A new repeater can pop up on a channel and there is really nothing that can be done about it if it causes interference to existing repeaters. For this reason, we try to keep our signals out of the Sacramento Valley, focused on the area of operation, using directional antennas. In the GMRS world, while some repeaters are used for purposes like our Neighborhood Radio Watch, others are used by "wanna-be" hams who, in my opinion, are too lazy to get their licenses. These repeaters are full of constant babble and, again in my opinion, are a total waste of spectrum. Since I don't expect the FCC to do anything about this, our future plan is to migrate the entire program over to Business Band channels.

These are coordinated channels, free from the wild-wild-west approach of frequency coordination (or lack thereof) used in the GMRS band. All GMRS radio users are required to be licensed and while a license does not require a test, there is a fee, recently reduced from \$70 to \$35. The Business Band will require that EDCARC pay a significant fee for the licenses, but users will not need to be licensed. We have already had some significant offers from those who believe in the Neighborhood Radio Watch to contribute to the fund-raising process to establish the Business Band channels,

### **ARRL Contesting Certificates**

If you have participated in ARRL Contests by submitting your log, enter your call sign and see your available certificates. You can view and download them. The certificates show where you placed in the contest.

### **Awards Checkers ARRL**

Ken Anderson, K6TA

### **Tube of the Month**

hence the need for the non-profit status for the Club.

We have a few MLDXCC members active in the program. W6QA, KE6GLA, and K6LRN. NC6R is also assisting in the Amador County Fiddletown program.

If you know of a group or community that would like to hear Alan's Camp Fire presentation, "Phones, Fires, and Failures", or our follow-up "Radio For the Rest of Us" presentation, feel free to contact me.

<http://contests.arrl.org/certificates.php>

(DXCC, WAS, VUCC, 160M)

Rick Samoian, W6SR

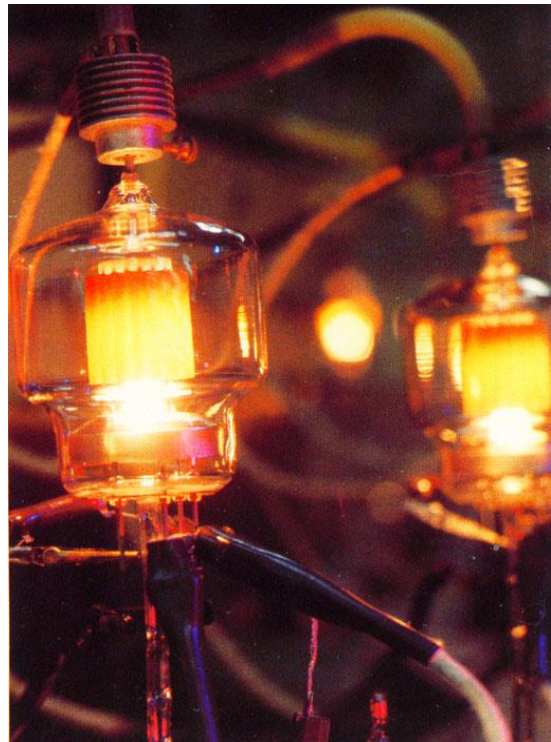
## **Vacuum Tube Processing**

In the late 1930s, the military was busy developing RADAR. They were searching for vacuum tubes that would handle very high voltages in pulse mode. Most manufacturers used “getters” to complete the evacuation of transmitting tubes. In high frequency RF use, this worked fine, but when the tubes were run at five to ten times the rated voltage, they tended to be damaged when they shorted. EIMAC had long used “hard glass” to handle higher vacuums and their tubes tended to survive the pulse service. They also used tantalum grids and plates as that material could be used at high temperature and would act as a getter. EIMAC also found that running the tubes at heavy overloads during the vacuum pumping process, would remove even more gas. In pulse service, the 4-400A was run up to 20,000 volts. The tube would need to be tested at even higher voltage. The photo shows a rack of 4-400A tubes being processed at the EIMAC plant in Salt Lake City. This photo was courtesy of the late Lane Opton, a former EIMAC plant manager at Salt Lake City.

No matter how much you pump, there will still be some particles clinging to the tube’s elements. This is dust at the ion level. Under an electron microscope, a pane of glass looks like the surface of the Moon. The plate of a tube is even rougher. Any high spots on the elements surface will be the first places that voltage breakdown would take place. Using a high voltage, low current, DC power supply called a hi-pot tester, the voltage is advanced until an arc-over takes place. It’s at a low current and no damage occurs, but the high spot is zapped and it releases any gas on it. The process is then repeated until the tube handles the desired voltage. The polarity is then reversed and the process repeated to process the opposite surface. In tubes of 35,000 to 100,000 watts dissipation, this test voltage would be around 60,000 volts with a current

limit of 3 ma. If a tube was transported or bumped around, it might need to be re-processed. This isn’t a big problem with ham equipment, but it does exist with both tubes and vacuum capacitors. The GS-35b Russian triode is famous for its destructive arcing when stored for 30 years, but it can be re-processed and saved.

The internal surfaces of the plates of high-power vacuum tubes are usually unplated copper. The external surfaces are plated to stop oxidation. Copper, when exposed to high vacuum, will actually result in the copper crystals starting to grow. Eimac



called the growth of high spots as developing barnacles. De-barnacled was recommended when tubes were shipped or stored for long periods. The process actually melts the tiny crystals that grow and produce a sharp edge or peak.

Visit the museum at [N6JV.com](http://N6JV.com)  
Norm N6JV

## **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

\*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

## **MLDXCC – Outgoing ARRL Bureau**

The Mother Lode DX/Contest Club will provide Outgoing QSL Bureau services to current paid club members. The policy is as follows:

The club will cover packaging, shipping, and the \$7.00 ARRL fee. Members will be responsible for the \$1.15 per ounce fee, payable to the club. A scale will be provided at the designated meetings to weigh the cards.

Twice per year, at the March and October meetings, members may bring their outgoing cards (or have delivered by another club member) to the meeting for collection and collating.

All regulations set forth by the ARRL must be met, including:

Members must be ARRL members to use outgoing bureau.

Must provide proof of membership (QST mailing label, ARRL membership card)

Cards need to be sorted according to ARRL requirements when brought to club.

The after-meeting program at those meetings would be dedicated to weighing, merging the cards, and making sure the paperwork is in order.

For more information regarding the ARRL Outgoing Bureau, please visit

<http://www.arrl.org/outgoing-qsl-service>

### **QSL bureau rates have changed.**

Outgoing QSL Service

QSL Service Fee Structure (effective May 15, 2019)

ARRL members — including foreign members, QSL Managers, or managers for DXpeditions — should enclose payment as follows:

Effective May 15, 2019, the rate structure is:

\$2 for 10 or fewer cards in one envelope.

\$3 for 11-20 cards in one envelope, or 75 cents per ounce, for packages with 21 or more cards.



[For example, a package containing 1.5 pounds of cards -- 24 ounces, or about 225 cards -- will cost \$18.]

Under the new fee structure, there are no transaction service fees.

You should use an accurate scale to weigh your cards. Most post offices have scales that you may use.

Please pay by check (or money order) and write your call sign on the check. Send cash at your own risk. DO NOT send postage stamps or IRCs. Please make checks payable to: "The ARRL Outgoing QSL Service."

Packages received with insufficient payment will not be processed until the balance is paid in full.

## **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>

The outgoing QSL bureau does not keep money on account.

## **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>

## **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.*

### **The Northern California Swap**

Thursday evenings at 8 PM local on the N6ICW repeater system 147.195 +123

Join Armand WB2ZEI and the group to buy, sell, or trade amateur radio related gear. Check-ins and visitors welcome.

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**New!** ["The Serial Box"](#) (SBOX) by N6TV – Combination Serial Port Splitter, ACOM / Elecraft / SPE Amplifier Interface, FSK/CW/PTT keying interface, and Breakout Box

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<https://www.eham.net/reviews/detail/13971>

Serial Box



Serial Box

"The Y-BOX" by N6TV – 4-way Elecraft K3/K3S ACC port splitter, Elecraft Amplifier Interface, and Breakout Box

<https://www.eham.net/reviews/detail/13296>



Y-Box

N6TV

**For Sale:**

Flex 3000 100W SDR Xcvr W/Built In ATU, Deluxe Firewire Cable, Firewire PC Card, Microphone, KE9NS PowerSDR Software.

Performs very well. Just a couple spots off a K3 on the Sherwood Scale. Runs all modes well. The

80/20 Waterfall/Spectrum displays 96KHz of spectrum.

With the addition of N1MM+ software it is a very effective click and pounce station.

\$600 plus Shipping/Ins from 89429.

PS: Looking for a small amplifier like a SB200, etc. capable of 500+ Watts.

73s de Tim - K7XC - DM09jh

**For Sale:**

Kenwood TS-430S Transceiver

160 through 10 meters including WARC bands

PS-30 power supply

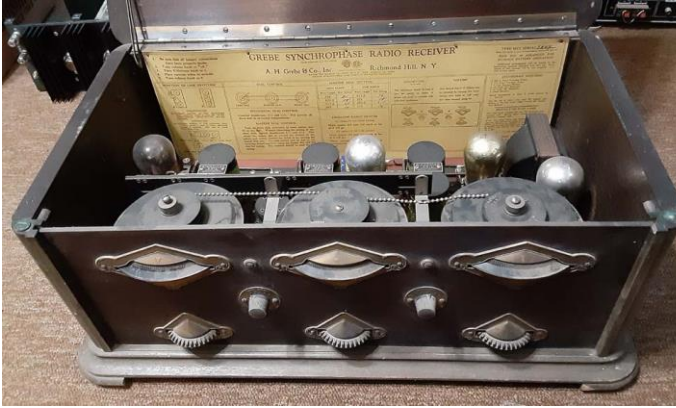
Microphone

Good all band radio that would be a good mobile unit.

Asking \$350 for the package



\*\*\*



1925 GREBE Synchronphase battery powered AM radio. Missing one tube but in excellent shape. Needs case re-finish. \$300  
These are estate items being handled by N6JV in Wilton.  
[N6JV@N6JV.com](mailto:N6JV@N6JV.com)  
(916) 689-3534 (916) 330-7334 (CELL)



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Need QSL cards, business cards, club banners?  
Contact Vina K6VNA [vina@sign-tek.com](mailto:vina@sign-tek.com)

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For Sale:  
National NC-125 receiver. Restored. All paper and electrolytic caps replaced. All tubes checked and weak ones replaced. Aligned and ready for a new home. Asking \$150.





<https://www.youtube.com/watch?v=b627ubsCLEI>

Contact Doug WE6Z, [we6z@hotmail.com](mailto:we6z@hotmail.com)

## **2020 Meeting Dates**

January – 23<sup>rd</sup> Zoom  
Feb – none  
March – 20<sup>th</sup>  
Apr – 17<sup>th</sup>  
May – 15<sup>th</sup>  
June – 5<sup>th</sup>  
July – 24<sup>th</sup>  
August – 28<sup>th</sup>  
September – 18<sup>th</sup>  
October – 23<sup>rd</sup>  
November – 13<sup>th</sup>  
Dec – none

*Dates are arranged to accommodate major contest dates.  
Meeting dates are subject to change. MLDXCC  
traditionally holds a mid-year combined meeting with  
NCCC.*

## **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/>

*Please contact the editor to have your club listed here.*

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Vacant

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## **The MLDXCC Newsletter**

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