



Publication of the  
Northern California  
Contest Club



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JUG Editor: Bill, N6ZFO n6zfo@arrl.net 415 209-3084

On tap for the Dec 2020 JUG: NA6O, Gary, The N6RO Antenna Switching System

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**NCCC October, 2020 ZOOM Meeting**  
**Sunday, Oct 18, 1330-1600 PDST**

**"Remote Contesting with RCForb and RemoteRig "**

*Ron Castro, N6IE*

**Date: Sunday, October 18, 2020**  
**Time: Chat at 1330 and after talk**  
**Meeting starts at 1400 PDST**  
**Meeting ends at 1600 PDST**

Ron will give details on his remote-operated K3-based station using RCForb and RemoteRig, with some info on [RemoteHams.com](http://RemoteHams.com) as well.

Web Access Instructions — see  
<http://nccc.cc/meetings.html>

QUICK START Guide to Zoom:  
<http://support.zoom.us>

## President's Report - WD6T

### Octoberfest

CQP has come and gone. By all measures, it was a smashing success. Thanks to all the club members for getting on the air and showing how we do things in W6. The world was a happier place as a result. Special thanks to the managers who did spectacular jobs.

As of this writing the hot weather has subsided, and the smoke is moderate. Good time to improve antennas. Get that dipole up higher. Replace that water-logged coax. Put down some more radials. If you need help, reach out to the reflector.

My own recent station improvements have included installing a new 6-meter loop on an extension mast above my HF tri-bander, which I'm looking forward to trying out in the January VHF contest. I also managed to repair my old MFJ antenna tuner. But my most significant improvements have involved station ergonomics, particularly the installation of a motorized sit-stand desk. I am planning to write an article about this important subject in the coming months.

Of course, just as we are catching our breath (as much as is possible with the smoke from the fires), there are more big contests on the way, most notably the CQ Worldwide SSB contest, followed by the pair of ARRL Sweepstakes, contests and then the CQ Worldwide CW contest.

CQ WW, as the premiere DX contest, is one of the highlights of the contest season. It has a simple exchange and can produce phenomenally high rates. For those who also keep track of their DX contacts, it presents an unparalleled opportunity to fill in needed band/mode slots.

For many, Sweepstakes was the first contest in which they operated. Thanks to N5KO's efforts, Sweepstakes QST

*President's Report Continues on Page 3*



## Officers:

<b>President</b>	<b>David Jaffe</b>	<b>WD6T</b>	<b>k6daj@arrl.net</b>
<b>Vice President /Contest Chair</b>	<b>Bill Fehring</b>	<b>W9KKN</b>	<b>bill+nccc@w9kkn.net</b>
<b>Treasurer</b>	<b>Tom Carney</b>	<b>K6EU</b>	<b>treasurer.nccc@gmail.com</b>
<b>Secretary</b>	<b>Gary Johnson</b>	<b>NA6O</b>	<b>secretary.nccc@gmail.com</b>
<b>Past President</b>	<b>Jack Brindle</b>	<b>W6FB</b>	<b>jackbrindle@me.com</b>
<b>Director</b>	<b>Bob Wolbert</b>	<b>K6XX</b>	<b>K6XX@arrl.net</b>
<b>Director:</b>	<b>Bob Cox</b>	<b>K3EST</b>	<b>bobk3est@gmail.com</b>
<b>Director:</b>	<b>Rich Smith</b>	<b>N6KT</b>	<b>n6kt1@sbcglobal.net</b>

## Volunteers:

Charter Member	Rusty Epps	W6OAT	w6oat@sbcglobal.net
Awards Chair	Gary Johnson	NA6O	gwj@wb9jps.com
CQP Chair	Glen Brown	W6GJB	210glen@gmail.com
K6ZM QSL Manager	George Daughters	K6GT	k6gt@arrl.net
K6CQP,N6CQP,W6CQP QSL Mgr	Ed Muns	W0YK	w0yk@arrl.net
NCCC Email reflector Admin	Phil Verinsky	W6PK	kb-w6tqg@verinsky.com
Webmaster	John Miller	K6MM	k6mm@arrl.net
Webinars	Bill Fehring	W9KKN	bill+nccc@w9kkn.net
JUG Editor	Bill Haddon	N6ZFO	n6zfo@arrl.net

## Thursday Night Sprint:

The Northern California Contest Club sponsors a Thursday Night Contesting session of thirty minutes duration.

Often, on Fridays prior to a major contest weekend, a special practice session is held.

Generally, on Thursday evenings, a special format is followed, called NS or "NCCC Sprint". The NS began in the summer of 2004 as a snappy, concise contest occurring most Thursday nights, North American time. The power limit is 100 watts. Occasionally multi-week ladder competitions are held. See [www.ncccsprint.com](http://www.ncccsprint.com) for details.

Thursday Night Contesting Director and Founder	Bill, N6ZFO
NCCC CW Sprint	Tom, N3ZZ (initially, Ken N6RO )
NCCC RTTY Sprint	Ken, K6MR
NCCC Sprint Ladder	Bill, N6ZFO
Sprint Web master <a href="http://www.ncccsprint.com">www.ncccsprint.com</a>	John, K6MM
Ladder Scores Manager	Tim N3QE
Thursday night Contesting Advisory Group:	N6ZFO, Bill (Chair)
	Mark K6UFO, (with W4NZ, N4AF, W9RE, K4BAI, N3BB, VE3YT and W0BH).
The Thursday night NCCC Net	Ken, N6RO



write-ups have been digitized and are available on the ARRL Contest web site. I was thrilled to discover one that included my own 1969 SSB entry as WA2BHJ from West Orange, New Jersey, when I was fourteen years old (69,040 points, with 490 QSOs and 70 mults, 22 BIC hours). I recall making a reel-to-reel tape loop of CQ and keeping it running, while I did my own running to the smallest room in the house for a quick bio-break.

Sweepstakes also has a special place in the history of NCCC. To celebrate this, in our 50th year, we will be sponsoring a special Sweepstakes award program. See Bill W9KKN's column for more info.

Note also that both of the CQ WW contests and both of the Sweepstakes contests are part of our "KB" competition. This intra-club competition has been going for several years and has been a huge success. It has spurred many members to contest more and to have more fun doing it. This is true both for new-commers and some veterans. Yet, as the CQP managers have shown us, even a good thing can use some tweaking now and then. The set of KB contests has remained the same for the last two years. Our Contest Manager, Gary NA6O feels that it would be a good time to poll our members, as we have done in the past, to see what contests they'd like to see in the competition, as well as to get input on any other requests for modifying the competition. While it is challenging to pick an optimal set of contests, as they are all our personal friends, please give it some thought. Perhaps one of the Asian/Japan/Oceania contests should be included, as these are contests where we on the West Coast can actually win. The new WW Digi contest did not even exist when the list was compiled two years ago. Expect a questionnaire to appear in your in-box soon and please weigh in when it does, even if you do not pay any attention to the KB contest yourself.

The October meeting will include several diverse presentations. One is on strategy for Sweepstakes, another is a dive into the Remote Hams ecosystem and the third... well you'll find out if you just turn on (your computer), tune in (to the Zoom meeting) and drop out (of the 24-hour news cycle, if only for a few hours... it will be there when you come back, I promise!)

**73 Dave WD6T**

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## **VP/CC Report - W9KKN**

Despite being a unique one, I'm still going to start by saying that the 2020 contest season is off to a great start! I spent the summer quite busy in both work and projects (and a bit quiet on the reflectors and such), but I'm really quite excited to get on the radio and make some Q's.

First of all, I have to thank the volunteers involved in CQP again for what appears to have been an exceptionally successful running of the contest. The hard work, the outreach, and the planning all appear to have paid off, and despite the COVID challenges getting all of the counties safely QRV, I can see that there are several out of state players who quickly got all 58. The SEQUOIA program was obviously a hit, and there was quite a bit of activity on the bands. I've seen some big scores throughout the NCCC circle and even managed a personal best. Thank you, everyone, for putting California on the air as loudly as possible and continuing in the tradition of CQP being the premier state QSO party.

But as many think of it, CQP marks the unofficial beginning of the fall contest season (in addition to WW RTTY, of course,) so it's time to get to work.

Of course, quite a few club members will be there for CQ WW SSB next weekend, but it's hard to be competi-



tive in this contest as a club; but beyond that, let's talk about a few plans:

1) ARRL Sweepstakes: This contest has a special history within the NCCC and was a focus effort for many years. This year, in celebration of our 50th anniversary, we would like to do something to commemorate the role it has played over the years. As a club, there are two realities we must face; first, that we don't have as many active members as we used to (and as such, we would have difficulty competing for an unlimited gavel given the top-scoring clubs end up with almost 3x the number of logs.) Second, for the last several years, we have had a cooperative arrangement with several of the local contest clubs that many of our members are also part of where they (very successfully) pursue the medium and small club gavels. We'd hate to be in a position where these clubs wouldn't be able to pursue continued dynasty over these gavels, so we're going to try to have the best of both worlds. In essence, if you participate in ARRL Sweepstakes as a current dues-paying NCCC member at the time of the contest, you will be eligible for special NCCC awards for your efforts.

At our October meeting, we will present some quick strategies and refreshers (in addition to what we have in the member's section of the NCCC website), so be sure not to miss out. Also, if you've let your NCCC membership lapse (for whatever reason that might be), or you aren't yet an NCCC member, please make sure you rectify that as soon as possible! You can, of course, still submit your log for NCCC too.

Sweeps is one of the oldest contests around, lots of skills and strategy are involved in a big result, and there is wisdom about this contest throughout the club. Don't miss it. As a reminder, CW sweeps is the weekend of November 7th, and SSB sweeps is the weekend of November 21st. Mark your calendars, and make your operating arrangements now.

2) For the last several years, NCCC has achieved a decisive victory for the unlimited gavel in the ARRL RTTY Roundup. This year on January 2nd, we intend to make sure no club takes this from us, and I literally can't think of any better way to celebrate the year 2020 FINALLY BEING OVER WITH than getting on the air and showing them how NCCC does RTTY. We have several strong digital operators in our club, and we have many that are just getting warmed up (which, when running RTTY at high power, incidentally also warms up the entire shack.) This year, the RTTY roundup has added a multi/multi category, **but we have to make sure we get at least 51 logs turned in to win.\*\*** Again, special prizes will be available, but in this case, you **will** need to submit your log for NCCC. Make your operating arrangements as soon as possible; the club circle matters for this contest.

And with that, KB everyone, I hope to see you on the bands.

Vy 73,

Bill/W9KKN  
NCCC VP/Contest Chair

*\*\* Editor's Note: Please take Bill's comment very seriously on the 51-log requirement for RTTY Roundup. While you're at it, read and re-read the description of the harrowing search for 51 logs from 2020, described in the February 2020 JUG, page 17. And again we thank N6GEO for making victory possible by submitting log #51 just a few hours before the deadline.*



## Editor's Column

Bill, N6ZFO 415 209-3084

Renaissance NCCC member Ken Beals, K6MR is, by circumstance not design, featured multiply in this almost 50-year anniversary edition of the JUG. First — Ken's accounting of the September 2013 fire which devastated the K6MR station just as he was installing a giant Quad. Second — Ken's article on the use of a single KPA-1500 for SO2R contest operation should attract wide interest, and Third — Ken's dominance in the recent 30th NCCC Sprint Ladder competition. All illustrate the breath, depth and versatility of Ken's contesting talent and commitment. Not to mention that Ken manages, with enthusiasm and exceptional perseverance, the weekly RTTY-NS Thursday night competition.

Rounding out this issue is the PGP (Point Generator Profile) for Ed Radlo, AJ6V, whose impact on NCCC contesting increases on a weekly (not weakly) basis. Within the last week, following a super effort in the Makrothen RTTY test, Ed zoomed into 4th place in the KB Competition's Gold category, leaving N6ZFO in the dust in fifth place.

Three of our members have had devastating fire issues to tell — Saraj, KU6F in the Tubbs fire of 2017, described in the December, 2017 JUG, Bob, K6XX in the recent Lighting complex fire in Santa Cruz region, Sept 2020 JUG, and now Ken's account. K6MR's mention of his harrowing experience with a security gate on his property should serve as an urgent precautionary warning to all in a similar situation. Possibly, by sheer luck, Ken's gate stayed open because a power failure occurred in the 90 seconds after his leaving the property, thus allowing fire truck access. That may have saved his house. And, referring to the video cited in the Sept. 2020 JUG in the N6ZFO fire resistant construction article, the garage in the house of KE6UAR's son in Loch Lommond, Lake County, was heavily damaged because the garage door opener defaulted to open at the onset of the 2015 Valley fire. Thus it seems important to avoid commercial power connections to such devices for those living in forested, fire-prone areas. Often, access codes are in secure boxes for emergency access; but if the gate loses power, access may be problematic. Here at N6ZFO, where the gate is 1.3 miles from the house, a large solar charged RV/boat-type battery is the source of power, but there's even a back-up precaution for that.

Finally: Regarding submitted material for the JUG: Please note the revised guidelines on page 19. The most important points: pdf documents are not suitable, and writing in the text of an e-mail can be problematic. While we can deal with almost any format, a word processing document is preferred. In that case, ideally, indicate locations of illustrations in the text, but attach those documents separately if possible. The MS-Publisher program performs poorly with imbedded photos. The font style and size are less important, but specify a particular font if you wish, else it will be change to Arial, 11-point.

**73, Bill N6ZFO**  
**Editor, NCCC JUG**  
**415 209-3084**

# CQP Corner

Dean, N6DE

[cqden6de@gmail.com](mailto:cqden6de@gmail.com)

**Thanks to all of you for participating in CQP!**

**Here are my top 10 observations, written less than a week after CQP.**

1. Just four days after CQP, we have now officially broken the record of the number of logs received in the 55 year history of CQP. We broke the 1,000 log mark and expect hundreds more over the next few weeks.
2. The all-time CA S/O HP and CA S/O LP records were shattered by a large margin.
3. All 58 CA counties were on the air. Between COVID-19 and forest fires, I thought there would have been no way for all counties to be active. Yet, there were several stations outside of CA with county sweeps. A sincere thanks to all of the expeditions and mobiles that still went out into the field this year, despite all the challenges. It was an impressive effort and I thank each one of you for being such an important part of CQP again this year.
4. Fixed CA stations came out in force this year. This was our focus, and you delivered. There clearly were more fixed stations active from NCCC this year compared to last year, and the amount of activity was much higher from many of them that participated last year.
5. Remote operating played a more important role than ever before. It made many opportunities possible that otherwise would not have happened. KU8E in GA operated WX6V's station in Placer County, and K5CM in OK operated the N6IJ station in Monterey County. The N6RO team, W6NV team, W7RN station, K6IJ station, N6IE, AA6MU, K6NR, ND2T and WA6URY all utilized remote operating to make large numbers of QSOs in CQP.
6. I compared the CBS reports between the 2019 W6MY CQP log file and the 2020 K6U CQP log file from the same W6MY station. As a percentage of overall QSOs, the 10 multipliers that increased their percentage the most in our 2020 log are: NY, TN, NV, MN, IN, GA, MD, NC, FL, MB. Did you see similar trends?
7. NT, AB, SK, BC and ND were the rarest multipliers for us. There were 3 stations active from NT, over 10 from AB, over 5 from SK, over 15 from BC and over 5 from ND.
8. Kings, Merced, Colusa, Tehama and Glenn appear to have been the rarest counties.
9. The 21 1x1 SEQUOIA stations made a grand total of 42,401 QSOs: 24,391 on CW and 18,010 on SSB. Incredible numbers!
10. The low bands were really good, yet 15m was better than I expected. I believe 15m could have supported more QSOs than it did. For example, the band was open strongly for hours on Sunday to W1, W2, W3 and VE3, but I think several of these stations assumed it was closed and stayed on 20m.

73,

-Dean - N6DE

# CQP 2020 County Expedition Station K6U in Sierra County W6MY (Chip, on site), N6DE (Dean, remote)



Entrance to 2020 CQP Station K6U in Sierra County .  
Expedition organized W6MY, with N6DE.



2020 CQP from Sierra County. K6U,  
ops W6MY and N6DE

# The September, 2013 Wildfire at K6MR

*Ken Beals, K6MR*

September 9, 2013 dawned bright and clear, warm, with a stiff wind blowing out of the north. Being able to recall the exact weather conditions over 7 years later means that this was a day not to be forgotten.

After retiring in December of 2012, my budding interest in contesting was now free to grow at will. I spent January to September 8<sup>th</sup> of 2013 assembling all the pieces so I could get back in and have some fun. I refurbished a big travel trailer for the shack, put up the first 80 foot tower, and assembled a reasonably large multi-band quad. I've always been intrigued by quads. They just seem so, *unusual*.

I had spent the previous two weeks assembling the quad after hours of simulations. I raised it to the top of the tower. After running the typical SWR curves and such, I decided a bit of tweaking was necessary. So I spent September 8<sup>th</sup> lowering it back down to be able to reach everything make the changes the next day. I'd be set for CQP 2013.

Going out that morning quickly dispelled any ideas I had about climbing a 30 foot ladder strapped to the boom. Not that I'm afraid of heights, but ladders are definitely not my thing. Especially with the wind moving everything around. So I put the adjustments on hold and headed into town to run some errands.

At 12:15 my wife called. "Big fire, north of the house". I was in a location that I could look directly west and see the billowing smoke. "Not to worry", I said. "Calfire will take care of it". "I don't know", she said. "Looks big". "OK, I'm just about done. I'll head back to the house".



The K6MR Multi-band Quad rests confidently at the top of Ken's 80 foot tower shortly before the 2013 CQP Competition.

In the 25 minutes it took to get back to the house I kept watching the billowing smoke. Hmm. Does not look good. Building fast. I met my wife halfway up the dirt road as she was coming down. "I'm packed and getting out. Got the dogs but not the cat". "OK, I can get the cat".

That final half mile convinced me this was no ordinary fire that Calfire would take care of in a few hours. The wind was blowing it directly from the north to the south, and our property was in the way. By the time I got to the driveway entrance on the south side of the road, the fire was just about to jump the road and continue its destructive march to the south. The electric gate opened, and in I went.

Luckily the cat was waiting for me on the porch, so after grabbing the cat carrier and stuffing her in it, I grabbed some clothes and a couple of hard drives. No time to get anything else. As I left the house, a Calfire water bomber passed overhead. I swear he wasn't 50 feet above the tower. But at this point I didn't care.

As I made my way out the driveway, fire was burning on both sides. Manzanita trees are known to be torches, and I was now seeing them first hand. I could feel the heat through the windows of the truck. This was the big one.

When I got to the gate, it opened. I hadn't given it a second thought. The gate had always opened. Out we went, down the dirt road, meeting a County Sheriff on the way who was making sure everyone was out.



After spending the next 5 days in a hotel, we were finally allowed back in to inspect the damage. Though I can't confirm it, it appeared that Calfire had saved our house. Some minor damage, but basically all there. The shack, storage, workshop, and the quad were toast. As I learned later, that is procedure. Save houses, ignore outbuildings. Trailers too. We had been told afterward that there were several Calfire trucks on the road during the fire doing what they could.

But then I thought about it. The electric gate should have closed 90 seconds after I left. How could Calfire have driven into the property? And then it hit me. I didn't have to open the gate when we returned. Upon inspection, it appeared that in the 90 seconds between my driving through the open gate and the time that the gate should have closed, the controls burned up, leaving the gate open. Which meant that if I had waited just a few minutes longer to get out, I might not have been able to drive out without smashing through the gate. If I could have.

The following pictures show what was left of my 9 months of work on the station, in addition to many more years of workshop and storage construction. The only 'before' photos I took were of the quad. I just never imagined that things could disappear that quickly. Calfire estimated that the fire started at approximately 12 PM. My UPS logs showed that we lost power at 1:30 PM, due to the power drop pole (located south of the house) burning and falling over. So the destruction on my property was likely done in less than an hour. And yes, it was proved that the fire was indeed a case of arson. The perpetrator is now serving a long sentence..

It is a day I shall never forget. Ken, K6MR



# SO2R with a Single Elecraft KPA1500 Amplifier

*Ken Beals, K6MR*

## **A bit of background and reasons for the project**

When I started my second attempt at building a station after I retired in 2013 (big wildfire, but that's a whole 'nuther story, told elsewhere in this issue), I had by that time been convinced that Elecraft equipment was the way to go. It had been over 30 years since I had been seriously active, but Elecraft had gained at great reputation.

I was briefly active in 2004/5, and had built a couple of Elecraft K2s. Compared to the old "hollow state" radios I was used to from the early 1970s, they were indeed a pleasure to operate. So the new station was suitably equipped with K3s, P3s, and two sets of the Elecraft KPA500/KAT500 amp/tuner combination.

I was a little nervous about contesting with only 500 watts. I did the math, thought about it, and figured, "It's not even an S unit difference!". So the complete Elecraft SO2R setup served me well for a year or so.

But as always, I figured I needed a little "boost". But what to buy? The integration of the Elecraft equipment was just too much to give up. And, although there were rumors (and even pictures of prototypes), it was the conventional wisdom at the time that Elecraft was unlikely to produce a full throated 1500 watt amplifier. What to do?

I considered building a couple of W6PQL solid state amps. Two 1000W capable amplifier "pallets" combined to provide a solid 1500 watts plus at the output. He provided everything needed. Some assembly required, of course. But two parts he supplied got me thinking.

First was the "input splitter". This would divide the exciter drive to the separate pallets. Then there was the "output combiner", to put the outputs back together.

Then it hit me. Why not take the two KPA500s and combine them? Yes, just 3dB (minus any inevitable losses in the combiner), but hey, it was 3 dB! And I'd still be 100% Elecraft.

But then I thought, wait a minute. That means I'd need to buy two more KPA500s at a minimum. Not a fortune, but still substantial. And since the new station was in a slightly crowded room, I'd need to figure out where to put them.

It then occurred to me that one of the KPA500's advertised features was rapid band change. Milliseconds. Not instantaneous, but maybe fast enough to switch between two bands in an SO2R setup.

Long story short, some experimenting and timing measurements convinced me that it should be possible to switch the two combined amplifiers between bands as quickly as needed in an SO2R setup. The SO2R controller (a Micro-Ham u2R) provided the needed TX focus signal, and an Arduino could switch the band data from each radio and feed the amplifiers. A few other details like keying, AuxBus, and RF path switching and I was in business. 1000 watts, all Elecraft. And \$4000 cheaper than buying two more KPA500s. I put everything together and it worked great. A real KPA1000.

## **Rumors of real Elecraft power!**

Then I started hearing the rumors. Elecraft had a Big Boy amp ready to go. 1500 watts, built in tuner. The works. Now I was really in a pickle. Would I be able to do the same thing with a single KPA1500? Would the operation be similar enough to adapt to my switching scheme?

I surely hoped it would work. Now we were talking an extra \$6000 if I needed two KPA1500s. Once the amp was released and I looked at the external ports and specs, it did indeed look like I would be in business.

About this time I also decided to upgrade the SO2R controller. The MicroHam u2R worked well, but the MK2R+ had lots of advanced features. A bit pricey, but I searched a bit and found a used one.

Reviewing the MK2R/MK2R+ manual, I found that it could supply all the signals needed to switch the amplifier between bands. It would translate the serial port frequency data from the two K3s and provide the needed band data to put the amplifier on the correct band. It also had keying delays I could use if for some reason the KPA1500 turned out to be slower at band changes than the KPA500. As it turned out, these were not needed. But the original design could be simplified using the MK2R+.

The result shown here is the result of a bit of tinkering, a bit of reverse engineering (the AuxBus magic) and a bit of mechanical design. It turned out to be even easier than the original dual KPA500 setup.

Figure 1 shows the basic block diagram of the system.

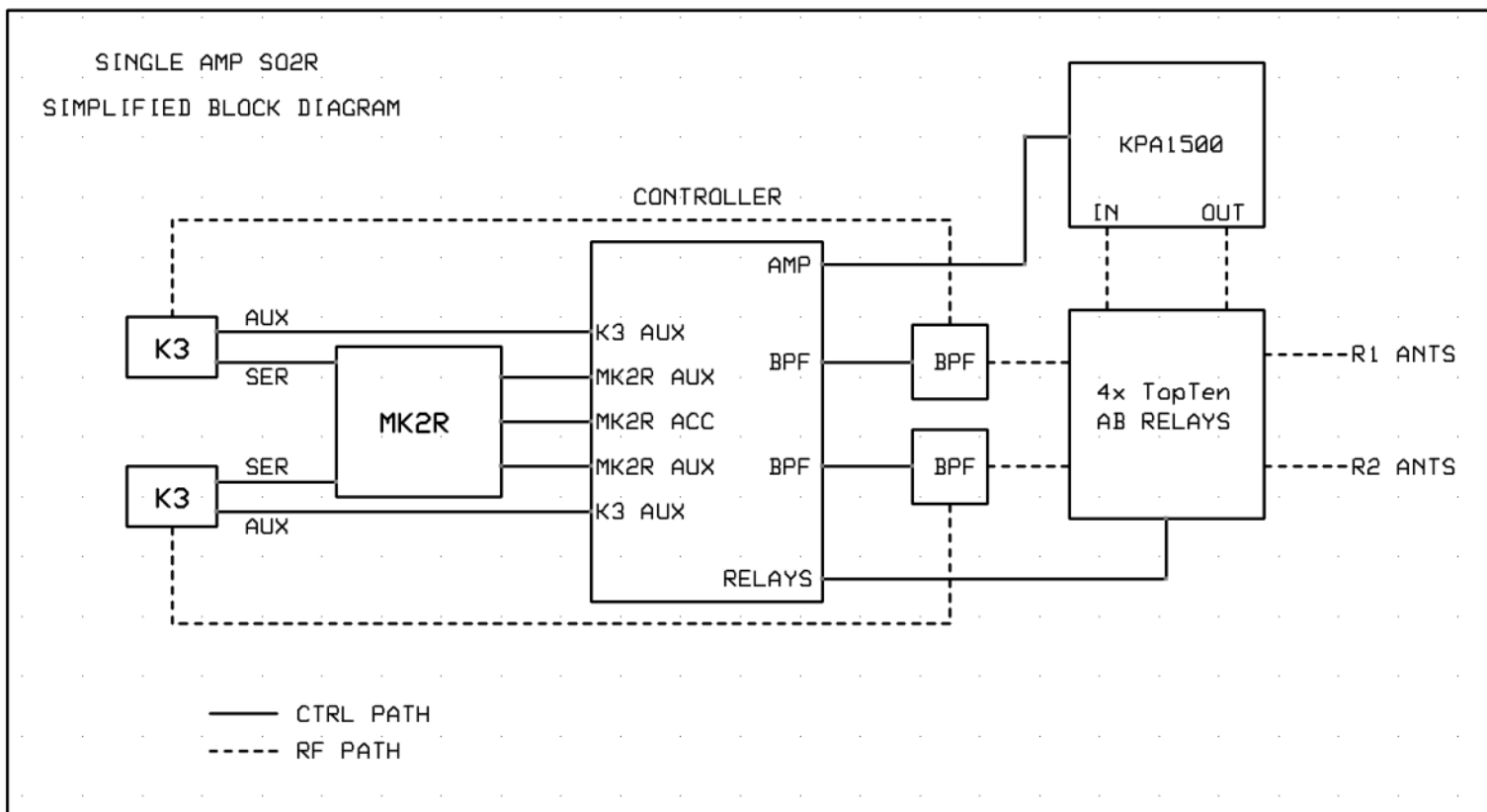


Figure 1. Block Diagram of the KPA-1500 SO2R System Designed and built by Ken Beals, K6MR

Although I call the big box in the middle a “controller”, it is actually just a central place to gather all the required signals and distribute them appropriately. The MK2R provides the 4 bits of band data to the amplifier, as well as the “which radio is transmitting” signal to switch the TopTen AB relays which provide the proper RF path. The AB relays switch the input and output of the amplifier to the proper radio and antenna path, respectively, for the transmitting radio. They also provide a RF bypass path so the non-transmitting radio can still receive.

The controller also provides connections between the K3s and the MK2R for things like FSK, PTT, and the Inhibit signals. Signals that would normally need to be broken out of the K3 Aux connector using a Y connector (or something as nice as N6TV’s Y-Box) are either directly connected or brought out to a single connector that provides cables with RCA connectors for easy access.

The SO2R band pass filters are driven directly from the band data supplied by the radios. This ensures that each radio is properly protected from the other no matter what happens to the band switching controls provided by the MK2R.

The only real “control” function provided by the controller is management of the AuxBus messages that are passed between the radios and the amplifier/tuner. An Arduino microcontroller monitors the three AuxBus lines (R1, R2, Amp/Tuner). When a message is detected, it decides how to route the message. There are only a few cases to consider:

1. Amplifier messages such as Power On, Power Off, Operate, and Standby need to be sent to both radios. These messages alert both K3s to switch to the appropriate power level for amplifier/no amplifier operation.
2. Amplifier ‘hard fault’ messages. These messages inform the radios that the amplifier is offline, so both radios need to know about the fault condition.
3. A message to initiate a Tune (as in antenna tuner) operation from the amplifier is sent only to the radio that has transmit focus.
4. Messages from a radio that convey frequency information to the antenna tuner are just forwarded to the amplifier. This allows the antenna tuner to follow the radio and use the antenna tuner’s preset frequency blocks. This is only done for the radio that has transmit focus.

One special function that I needed was necessitated by my station layout. Because I’m very space limited, the amplifier is located in a closet across the room and behind me. When I am operating, I cannot see the amplifier front panel without turning around. I monitor the amplifier using the Elecraft remote control application, but I found that in the heat of battle the remote application is not in my primary field of view. If the amplifier declares a fault (which rarely happens) I would fail to notice it. For this reason I installed a bright red LED in a conspicuous place. The LED will light (and is directly in my primary field of view) when the alarm output of the amplifier is active. The KPA1500 alarm output is sent to the Arduino which then controls the LED brightness using a PWM output. This makes it easy to set a reasonable light level without having to experiment with current limit resistor values.

Figure 2 shows the controller circuit board. The only active devices are the Arduino Nano and two MOSFET switches. The MOSFETs control the TopTen AB relays. The rest of the board consists of the nine DB/DE style connectors necessary for interconnecting the various pieces of equipment.

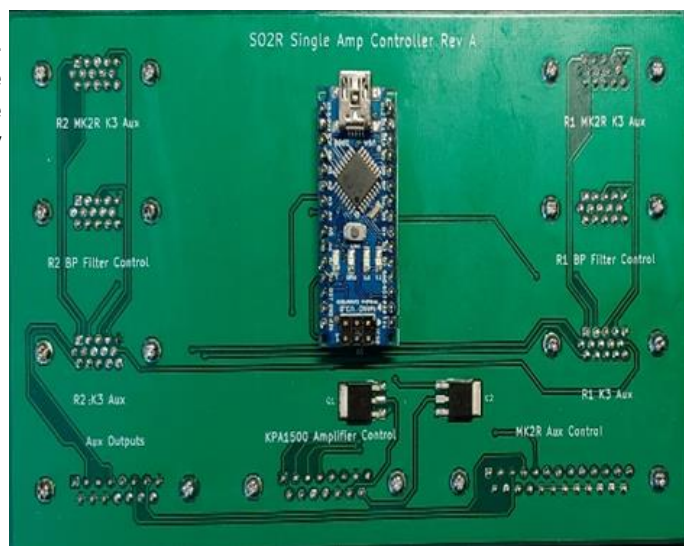


Fig 2. Controller Circuit Board



Figure 3. Controller Panel for K6MR’s KPA-1500 SO2 Configuration.

Figure 3 shows the front of the controller. I have this mounted on the wall behind the operating desk. All the necessary cables from the radios, MK2R, and the control cable to the amplifier and RF relays are connected here. This has greatly simplified the cable maze that used to be behind the radios.



Figure 4. Top Ten Devices AB relays for control of th(k6mr@outlook.com

Figure 4 shows the 4 TopTen Devices AB relays used to route the RF paths. The coax loops are the bypass paths. The radio inputs and antenna outputs are on the bottom. The cables connected to the right angle connectors are the amplifier input and output. This assembly is mounted in the closet directly behind the amplifier cabinet. The relays are rated to provide 80dB of isolation between the A and B ports, and when combined with the 35 dB minimum out of band isolation I get from my switched BPFs, the transmitter signal is never above minus 53dBm at the other receiver. Given that S9 on the receiver is approximately minus 73dBm (50uV into 50 ohms), the input signal on the opposite radio is approximately S9+20dB. The K3 has a "HIGH RF" warning circuit, and I have never seen the warning in the 4 years I have operated with this set up.



Figure 5 shows the amplifier and switching relays in the closet. The AB relays are directly behind the amplifier cabinet. The big aluminum boxes just below the shelf are the SO2R filter banks. The control cables run in a conduit below the floor to the operating desk.

### The results.

The KPA1500 has proven to be the perfect amplifier for this application. Although most of my antennas do not require the antenna tuner, those few times that require it are easily accommodated by a quick click on the 'Tune' button in the Remote application.

The amplifier is very capable of running RTTY at full power for hours on end, switching between the two radios. Yes, the fans run at the higher speeds. But with the amp in the closet I just don't notice it. So far I've never had the amp shut down due to high temps. CW and SSB are easily handled.

Disadvantages? A few. If the amp fails, I'm immediately in the low power mode. Also, since the radio that does not have transmit focus cannot communicate with the antenna tuner, if you want to tune around and have the tuner follow you the transmit focus needs to be manually changed. I have not found this to be a problem.

Do I feel louder? Of course! I think N6TR used to say if you feel loud, you are loud. And I'm loud on two bands for about \$6000 less. Quite a bargain!

**Ken, K6MR**

**k6mr@outlook.com**

Figure 5. The KPA-1500 K6MR SO2 System Installed in a closet near the K6MR Shack

# Results—NCCC Sprint Ladder XXX, August 21—Sept 10, 2020

*Bill Haddon, N6ZFO*

Every so often, usually prior to a NCJ NAS CW Sprint, the weekly CW NS competition, part of NCCC's Thursday Night Contesting, morphs to a ladder competition in which scores accumulate over several weeks. The provision to drop one or more week's scores is appreciated by many, especially for those East coast participants who accidentally take a too-long nap prior to the NS. In the recent NSL XXX, a short ladder of four weeks, the top three scores counted toward standings in our five contest divisions. Full results appear on the next page.

When the Ladder competitions are held, new NS-afficionados show up, the competition intensifies and everyone has a good time racing along at cw speeds sometimes approaching 40 wpm. But a new NS or NS Ladder competitor at say 25 wpm is treated delicately, in most cases anyway, by NS regulars, many of whom have been with the contest since its inception in 2003. Part of the attraction is the high rates of up to 120/hour, exceeding those of the NAS events.

Thanks to Tim, N3QE, results posted to 3830scores.com appear immediately at [N3QE.org/ladder.html](http://N3QE.org/ladder.html) with appropriate calculations for the multi-week contest and correct ordering for the various divisions. The contest is managed by our Advisory Group of experts, W9RE, N4AF, N3BB, W0BH, VE3YT, W4NZ, K4BAi, and our two NCCC members, Bill N6ZFO and Mark, K6UFO. K6MR and N3ZZ manage the weekly NS RTTY and CW events.

The graph of the total stations participating in our 30 ladders shows that the recent NSL XXX was well attended, and there has been carry-over into the weekly NS sessions.

For NSL XXX the overall winner, as usual was Ty, NO3M with 7871 points over 3 weeks. Note the cartoon below.

**NCCC in C/ANV:** K6MR completely dominated with 6271 points, leading 2nd and 3rd place scores of 4636, WD6T, and 4400, N3ZZ. An encouraging 9 NCCC members participated including newer member Carl, N6TVN, and Roberto, K6KM who just dipped his toe into the competition.

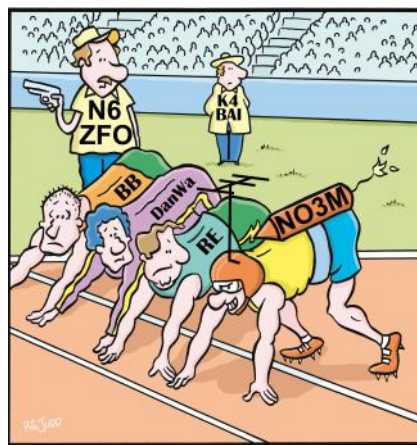
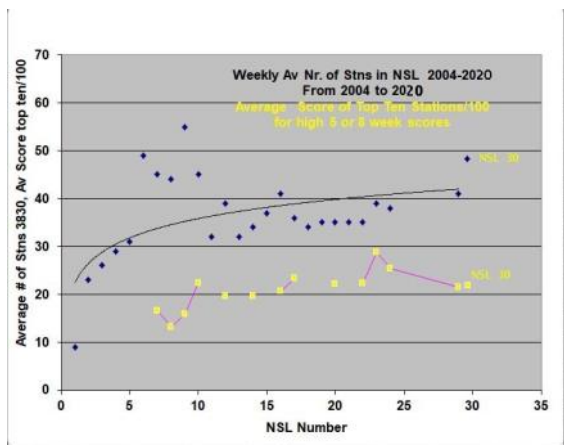
**West Division:** These days, Marko, N5ZO, who achieves amazing scores for the non-NCCC member west coast division, was first with 6590 points, but followed incredibly closely by Dick, K4XU (Bend, OR) with 6545 points, a 1 QSO difference over three weeks.

**West Central:** Jim, N3BB and Art, KZ5D, are both personal friends and contest rivals. This time, Art came out on top with 6365 total points, against Jim's 6016.

**East Central:** The story never changes here. W9RE's 6751 points good for first place. When I visited Mike in 2007 following a meeting in Indianapolis, the general instructions to locate Mike's QTH are "go to south Indianapolis and look up." Mike and I are both Purdue Boilermakers, from the days of Bob Grieser's football achievements there.

**Atlantic:** NO3M's 7871 point score outdistanced one of the finest competitors in ham radio, Howie, N4AF. But note the Week 2 score from Ty, illustrating the importance of the dropped week.

The next NS Ladder will occur prior to the February, 2021 NCJ CW NAS.



# Results—NCCC Sprint Ladder XXX, August 23—Sept 12, 2020

## Atlantic Division

Call	Class	Wk1	Wk2	Wk3	Wk4	Average	High 3
N03M	LP	2379	748	2432	3060	2154	7871
N4AF	LP	2214	2067	1944	1976	2050	6257
N3QE	LP	1836	1700	2016	1376	1732	5552
K7SV	LP	1764	1575	1938	1551	1707	5277
K4BAI	LP	1575	1240	1376	1036	1306	4191
W1FJ	LP	1575	704	972	1085	1084	3632
W1UJ	LP	437	1312	1014	918	920	3244
K40AQ	LP	840				840	840
K8CN	QRP	300				300	300
AB1BX	LP				56	56	56

## NCCC in CA/NV

Call	Class	Wk1	Wk2	Wk3	Wk4	Average	High 3
K6MR	LP	1989	1320	2150	2132	1897	6271
WD6T	LP	1548	1148	1312	1776	1446	4636
N3ZZ	LP	1248	1394	1408	1598	1412	4400
N6ZFO	LP	837	1036	1530	918	1080	3484
K7GK	LP	775	580	704		686	2059
AJ6V	LP		520	442	759	573	1721
W6SX	LP	144			884	514	1028
N6TVN	LP	306	300	315	374	323	995
K6KM	LP		20			20	20

## East Central Division

Call	Class	Wk1	Wk2	Wk3	Wk4	Average	High 3
W9RE	LP	2337	1363	1995	2419	2028	6751
W8WTS	LP	1376	2214	1890	1887	1841	5991
NA8V	LP	1645	1350	1872	2028	1723	5545
KW8N	LP	1656	1440	1887	1976	1739	5519
K9BGL	LP	1575	1485	1575	1887	1630	5037
W1NN	LP	1248	1020	1564	1836	1417	4648
K8MR	LP	1408	1189	1440	1144	1295	4037
VE3YT	LP	1140	690	1271	1120	1055	3531
N8EA	LP			1496	1548	1522	3044
K1GU	LP	888	910	816	806	855	2614
W4NZ	LP	1080		144	1353	859	2577
N4DW	LP		825	672	875	790	2372
N40GW	LP				1472	1472	1472
N9LQ	LP	384	588			486	972

## West Division

Call	Class	Wk1	Wk2	Wk3	Wk4	Average	High 3
N5ZO	LP	2160	1485	1850	2580	2018	6590
K4XU	LP	2337	1518	2166	2052	2018	6555
K7SS	LP	1944	2128	2128	1820	2005	6200
W70M	LP	1200	858	1160	1204	1105	3564
WJ9B	LP		1472		1785	1628	3257
AA7V	LP				1530	1530	1530
NN7SS	QRP	425	330		494	416	1249
K0RF	LP	1110				1110	1110
NG7M	LP				1073	1073	1073
AA7V	HP			676		676	676
N7DX	LP			171	273	222	444
KI7Y	LP			228		228	228
W7WHY	LP				88	88	88

## West Central

Call	Class	Wk1	Wk2	Wk3	Wk4	Average	High 3
W8CAR	LP				690	690	690
K7GK	LP				640	640	640
WT2P	LP		180			180	180
WB2RPW	LP	63	25	45		44	133
K9NW	LP		130			130	130
K3IE	HP	90				90	90
NF8M	LP			48		48	48
W4ER	QRP				25	25	25
KZ5D	LP	2296	1504	1989	2080	1967	6365
N3BB	LP	1998	1872	1728	2146	1936	6016
WD0T	LP	1628	972	1488	2028	1529	5144
K0VBU	LP	1240	836	1066	1247	1097	3553
K0AD	LP	1240	1189	1120		1183	3549
KG5U	LP	672	874	1102	975	905	2951
K50T	LP		1715		1140	1427	2855
N0AC	LP	644	494	580	945	665	2169
K0TG	LP		300	99	832	410	1231
W0BH	LP	588	396	132		372	1116
K5PI	LP				975	975	975
N0KK	LP	520		396		458	916
KB5RF	LP		112	143	63	106	318

# Point Generator Profile

## Ed, AJ6V

*Interviewed by Bob, W1RH*

Everyone who hasn't seen the call sign, AJ6V, raise their hands.....

Well, now, there's no hands raised in this group; and as it should be!

Ed, AJ6V is, indeed, a well-known KB'er and he's our featured point generator this month. Ed is another one of the several lawyers who walks the virtual halls of this great contest club. More importantly for the Club, however, Ed generates points.

A quick look at 3030 shows the call sign, AJ6V, listed all the way back to 2002, where he posted points in two very important contests: SS CW and SS SSB. Now, in case you're wondering, the KB Club came in second that year, but it should be noted that although SMC beat us, we beat PVRC by a mere 33,224 points. The final outcome showed NCCC with 14,780,990 vs PVRC, with a score of 14,747,766, so let's just say that Ed made the difference in this match up with PVRC!

As of late, you'll find Ed somewhat addicted to the NCCC Sprints, both RTTY and CW, but you'll also find him in many other contests like NAQP, the CQ contests, ARRL DX, CQP, and I even saw Ed post a score to that contest close to my heart, the New England QSO Party. Of importance to this great club are big scores from Ed in our Focus Contests, like 1.7 mega-points in the 2020 WPX CW contest, among others.

That's enough from me. Now, let's hear from Ed:

**Name/Call Sign:** Ed Radlo, AJ6V

**Past calls:** KN1LDK, K1LDK, VP2MEV, VP5U, etc. I've operated from outside the U.S. in 10 contests: From VP2M (x3), VP5 (x2), VY2 (x2), P40, FM5, and KH6. The highest I ever placed as a single-op was #3 world, operating as VP5U in the 2002 ARRL DX CW Contest. I was part of the multi/multi at P40V in the 1988 CQ WW CW that broke the then world's record by 40% -- but we lost the contest to PJ2B by 2%!

**Location:** Los Altos Hills, California

**How much property do you have?** 1.25 acre; I'm about 350 feet ASL. I have a clear shot to Europe, need to elevate about 15% to get over the ridge to the East, and about 35% when working JA.

**Describe your antenna system:** Force12 C4 @63 feet above ground for 10-40 meters; Gap Voyager vertical for 40-160 meters. On 40 meters, I use the single element 40 on the Force12 on CW, and the vertical for RTTY and SSB.

**What's in your shack?** FT 1000 MP driving an Alpha 87A. My logger is now N1MM+ on a Windows10 platform. I finally switched from the NA logger just this year.

**What are your previous QTH's?** I started out in ham radio in 1959 in Rhode Island. Fellow RI contesters at the time were K1LPL (now W3LPL) and K1JYN (now K6LL). I was off the air from 1963 to 1974, when I moved to California.

**If you're working, what is your career?** I'm a practicing patent attorney, and have been doing that for a good many years. I was a law clerk on the Supreme Court of Rhode Island, and have worked at a number of law firms and corporations. I'm currently the co-founder of the boutique law firm Radlo & Su. A lot of my patent work is in the area of data security, especially cryptography; satellite communications; and other information technologies. I also



practice export control law.

**Married?** Happily married to Patty for 32 years

**Kids?** Three – Heather, Graeme, and Connor

**Grandkids?** Not yet, but one of our children got married last year, so we're hoping.

**How many DXCC entities have you worked?** I've had all the ARRL countries confirmed since 2002. With the deleted countries, I'm at 340/355.

**What are your favorite contests?** CW Sprints. Also, I find that I love RTTY. I'm new to it this year. Thanks to W0YK, K6UFO, AA3B and others for inspiring me to get on RTTY. Especially thanks to the KB Award, because if not for the incentive that provides, I never would have tried RTTY.

**Any tips for contesters?** First of all, find yourself a supportive significant other. Patty has been fabulous in that regard. Second, contest exuberantly and have fun. Third, keep learning new things in this dynamic service that we all enjoy — as W6RGG says, it's not a "hobby."

**What would you like to see changed in NCCC?** Not much. We have a great BOD and slate of officers this year. The NCCC is overflowing with super-experts in communications and computers and is a rich resource for anyone interested in ham radio contesting. I'm proud to be a member. For the KB Award, I'd like to see CW and RTTY emphasized a little more.

**Any other interests besides ham radio?** I used to do a lot of downhill skiing. I've traveled to 47 ARRL countries. I have a keen interest in politics, having worked to advance a number of causes that I believe in over the years.



Ed himself, AJ6V, proudly displaying an important NCCC Sweepstakes Award. Photo by N6TV.



The AJ6V Backyard Antenna Farm in Los Altos Hills, CA — somehow co-existing with PG&E.

## Tube Of The Month

# X-375

Norm, N6JV

Starting in 1942, EIMAC started assigning "X" numbers to experimental tubes. One of the most common of the "X" tubes is the X-375. You will find it in many tube collections which is surprising when you consider that there was no known use for it. The tube is a double tetrode allegedly made from parts from 3C24 tubes. It is also unusual in that it uses a giant 7-pin socket like an 813. The X-375 was made of thick hard glass and should have been able to take very high voltage. From some EIMAC notes, we find the project was started in April 1944 at Salt Lake City, with the X-159 and continued for over a year ending with the X-375. Why at the peak of WWII, would EIMAC expend such an effort and then abandon it?

If this tube was probably made to replace an existing tube and that tube must have been about the same size and shape. The SLC plant was very busy making vast numbers of VHF triodes for use in RF and pulse service at this time. The newer RADARs used magnetrons, so pulse modulators would still remain in demand. Several of the early RADAR units used the RCA 3E29 dual tetrode as a pulse modulator. The 3E29 is a pulse rated version of the 829B which was a popular pre-war VHF tube. In pulse service, it could handle 5000 volts. Much of the tube development was pushed by the military to have more rugged and dependable tubes. Many early RADAR sets were still in service and they may have wanted to modify them with stronger tubes. The pulse duty cycle is very hard on tubes.

### **It's just a theory**

Why would you use a giant 7-pin socket? The giant 7-pin socket has the same mounting pattern as the 7-pin septar socket that the 3E29 uses. When you want an easy modification to a piece of gear you don't want to cut up the chassis to mount it. The X-375 like the 3E29 has a pair of tubes with 6.3-volt filaments. EIMAC didn't make many tubes with 6.3-volt filaments. The exchange would only require a screwdriver and a soldering iron. EIMAC was in full production until August 1945 when it stopped abruptly when something happened that they never planned on. The Army dropped a bomb, the war was over, and soon all the gear that needed tubes was available in surplus for small change. Many of the "X" tubes after this date were reserved for post war tetrodes like the 4-250A and other tubes for commercial as well as military use.

***Visit the museum at <http://n6jv.com>***

**EIMAC  
X-375**





## NCCC Membership Information

If you wish to join NCCC, please fill out an [application for membership](#), which will be read and voted upon at our monthly meeting.

To join, you must reside within [club territory](#) which is defined as the maximum of:

- Northern California, anything north of the Tehachapi's up to the Oregon border, and
- A part of north-western Nevada (anything within our ARRL 175-mile radius circle centered at 10 miles North of Auburn on Highway 49).

Life Memberships.— \$250.00 Contact [secretary.nccc@gmail.com](mailto:secretary.nccc@gmail.com). The 80/20 Rule: Members who have reached 80 years of age have and been a NCCC Member for 20 years are eligible for Honorary life membership. Contact [secretary.nccc@gmail.com](mailto:secretary.nccc@gmail.com)

## JUG Articles Wanted!

Your help allows us to produce a quality newsletter. Please consider submitting an article!

The editor welcomes any and all relevant articles for inclusion in the JUG.

The preferred format is MS Word (.doc or .docx), Arial 11 point. Indicate the insertion point and title of diagrams and pictures in the text and attach photos separately. Pictures should be full resolution. Avoid PDF files and email text. Please contact us if that's your only format.

Send material to Bill, N6ZFO at [n6zfo@arrl.net](mailto:n6zfo@arrl.net) 415 209-3084

## Northern California Contest Club Reflector—Guidelines

The NCCC reflector is devoted to the discussion of contesting.

Topics include, for example, contests, station building, dx-peditions, technical questions, contesting questions, amateur radio equipment wants/sales, score posting, amateur radio meetings/conventions, and membership achievements.

Postings may not include personal attacks, politics, or off-subject posts. Such postings will be considered a violation of the Guidelines.



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