



**Publication of the  
Northern California  
Contest Club**



Issue 511

December 2014

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Guests are always welcome at the NCCC!  
Please join us.

**NCCC Meeting**

**Monday 12th January 2015**

**Location:-**

Hong Fu Restaurant  
20588 Stevens Creek Blvd., Cupertino, CA  
95014

**Telephone:**

(408) 252-2200

**Time:**

6:00pm Schmooz, 6:30pm Dinner,  
7:00pm Program

Program—TBD

**President's Report**

**Last Issue of The Jug?**

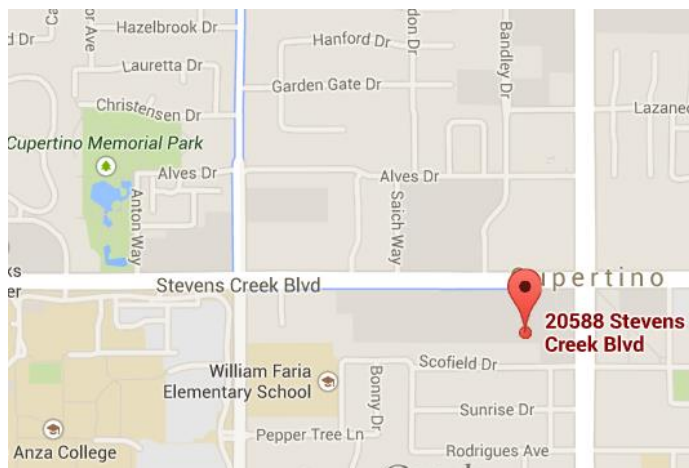
Ian W6TCP will be finishing his run as editor of the Jug with this issue. We still need a volunteer to replace him. He will train the volunteer. If no volunteer surfaces, the Jug will go on an indefinite hiatus.

**Still need an Awards chair!**

We need more help on awards. Please contact me or Byron if interested. Sweepstakes Thanks to everyone who sent in a log for NCCC and also thanks to Byron N6NUL for chairing the sweepstakes effort. We had a number of really amazing scores in the club. I appreciate the numerous small logs that were submitted. However, because of the mathematics of the multiplier scheme, we really need to make sure that even the smaller stations try to get a decent number of mults, perhaps 60, to make sure that the QSO's actually count significantly. This can be helped by using packet.

**CQWWCW**

We had a number of very impressive scores in the recent CQWW CW contest. Although we don't enter as a club, these individual station scores help to put NCCC on the map.



Continued on page 3



# Northern California Contest Club

*Excellence In Amateur Radio Contesting*

## Officers:

President	Rick Karlquist,	N6RK	richard@karlquist.com
Vice President /Contest Chair	Byron Servies,	N6NUL	byron@n6nul.org
Secretary/Treasurer	Tom Carney	K6EU	k6eu@arrl.net
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Director	Tom Hutton	N3ZZ	n3zz.tom@gmail.com
Director:	Ron Castro	N6IE	ronc@sonic.net
Director:	Don Taylor	K6GHA	k6gha@sbcglobal.net

## Volunteers:

New Member Mentor	Al Rendon	WT6K	wt6k@arrl.net
Charter Member	Rusty Epps	W6OAT	w6oat@sbcglobal.net
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CQP Chair	Chris Tate	N6WM	ctate@ewnetinc.com
CQP Certificates	John Miller	K6MM	k6mm@arrl.net
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
JUG Editor	Ian Parker	W6TCP	w6tcpian@gmail.com



# Northern California Contest Club

*Excellence In Amateur Radio Contesting*

### NCCC Net

Thursday 8 PM

Freq: 3.610 +/-

### NCCC

Monthly meetings take place on the second Monday of each month !

## NCCC Membership Information

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

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).

ARRL 160 meter contest Again, although we don't enter as a club, I see that many NCCC members collected wallpaper for last year's contest. Congrats to everyone who made the club look good in this contest. No meeting in December There will be no meeting in December. See you in January.

Rick N6RK



## THE CW OPERATORS' CLUB

*Celebrating The Unique Art Form Of Morse Code*

Join us for CW fun. Three one-hour three sessions: 1300-1400Z Wednesday, 1900-2000Z Wednesday, and 0300-0400Z Thursday(Wednesday night).

CWops Tests rules are at <http://www.cwops.org/cwt.html> .

Everyone welcome. You don't need to be CWops member to join the fun.

CWops Tests exchange. Members: Name and CWops Member Number. Nonmembers: Name and State, Province, or DX Country Prefix.

Lots of contacts or just a few, please report your result to <http://3830scores.com/> .

**The first rule of CW is to have fun and to share the fun.**

CW Exuberantly,

Hank, W6SX

CWops Tests Manager



Please submit articles for submission for the January JUG to Ian W6TCP by Jan 3rd 2015

Email: [w6tcpian@gmail.com](mailto:w6tcpian@gmail.com)

## Trials and Tribulations of building a new station

After I retired, we started looking for a retirement property. The old QTH had become surrounded by the City (Manteca) and we were no longer in the country. I had not had any complaints about the station, but for some reason the developers planted some large Redwood trees along the back of the lot that was closest to my 72' tower. And lowered the asking price.... Guess they thought that the people moving into the development would not appreciate the beauty of the aluminum sculpture atop the tower.

The XYL and myself had both been raised in Eldorado County where the trees were not planted in rows, and grew a bit taller. We had had enough of the flatland and wanted to move back to the hills. The decision was: Mountains or Coast? Since I had no desire to shovel snow, we started looking at coastal properties. We started at Fortuna and worked our way North. Nothing in CA was really in our budget, or stood out as "The Right Place". Eventually we worked our way on up the Oregon Coast. Spending hours and hours on the Internet and weekends driving to check out properties, time went by. On one trip to Coos County Oregon, we met with a realtor to view the property my wife had found on the Internet. It turned out that I did not like the construction of the house, and the location was in a narrow valley. The realtor said she had some more property that might meet the list of requirements we had. (By the way #1 on the list was no CC&R's). She took us by a couple of properties, and then showed us one a ways out of town up on a ridge, surrounded by forest. We went on to look at a couple of others and then asked to go back to the one on the ridge for a second look. We talked it over on the way home, and came to the conclusion that it was "The Right Place". It took us about a year before we finally got the place. We got it Thanksgiving 2010. My wife retired about 8 months later and then it was finally time to start the move! Since at this time the City decided to tear out the street and to replace the infrastructure, it took us about 6 months to move.

The property is 40 acres straddling a 500' tall ridge with a panoramic view. It was logged off in 2000, replanted and had a house built. That translates into a great antenna site with great take off angles and little blockage. There is a higher part of the ridge that blocks @120-160 degrees.

I did offer my old property on the reflector as a turnkey station, with permitted towers, but no one was interested. I began the process of moving. I kept the station set up at the old house as long as possible to be able to work the fall 2011 contest season. The last contest from SJV was 2012 ARRL DX CW. Then the station was dismantled. All the gear was boxed up and hauled up North. I had 3 towers to take down, as well as 2 wire antennas and 5 beams. A KLM 4 element 40, a 2 element 40, a pair of KT34xa's and a Ta33jr. I took the beams down, color coded the elements with colored electrical tape and bundled them for transport. Luckily I have a truck rack so I did not have to break the elements down. I had already dismantled my 18<sup>TH</sup> hi-tower since it had been in the way of the big 40-mtr beam.

In March 2012 the first antenna I put up was the 18ht hi-tower. It was placed fairly close to the house in a temporary setup. I pounded three 1 ¼" pipes in the ground, Slid the base section in, attached some guy ropes and tipped up the antenna. I then spread out the guys and pounded in the guy stakes. I ran the coax across the ground and in thru the old doggie door that went into the basement. I set up the TS870 on an old desk that a friend had given me, that just fit the space in the basement that I had chosen. My old custom made, multi-2 desk, stayed at the old house, it was



built in place in the 2<sup>nd</sup> story and I wasn't moving it. The antenna lasted about a week before I went out to find it lying on the ground. Damage was minimal, and I was able to repair it. The wind had actually pulled the stakes out of the ground. Now I added 2 more guys with 4' pipes driven in the ground. The highest winds I have recorded up here so far are 58mph. I now had a temporary station operational.

Meanwhile I found a large tilt bed trailer that I could borrow to haul the towers. I have a 72' US tower with a manual winch. I had contacted US tower to see if they would convert it to electric winch, but they NEVER returned my call or email. I also had 2 55' towers. The house sold and it was time to move the towers. One of the fellow NCCC members lent me his tower hoists and I used that to tilt the towers over. I have three 3-4' sections of 16" plastic water main pipes that are 1" thick. I laid the towers on those and used them as rollers to move the towers in from the pasture area to the cement slab by the barn where I could load them on the trailer. I used some 4" PVC conduit as rollers on the trailer. A friend came over and using a come along and jacks we maneuvered the towers onto the trailer. I was QRT from CA

The goal was to get the new station operational here in Coos County in time for the start of the fall 2012 contest season and initiate it with the CQP. Well, I made it, almost on time. In mid August I got the bases poured for 2 of the towers I moved up here from SJV. The 72' was tilted up on Sept 22nd, with a KT36xa on top. October 1st. I started on the 55' tower. I had to move it @400' and up a small hill. I used the 16" PVC pipe sections as rollers and ended up using 4WD truck to pull it up the hill, then finally levered it into position at the base. I then spent Wednesday reassembling the KLM 4 element 40-mtr beam. Thursday got the tower tilted up and antenna installed. I also installed a 2 element 40-mtr fixed on CA @ 36'. (I later put up my 80-mtr delta loop on this tower). Friday was cable day. Sorting through rolls of coax and rotor cable, measuring and inventorying, figuring out which to use where. One tower is @200' West of the house and the other is @200' East of the house. Got the coax all ran into the shack, lying on the ground. I spliced the rotor cables and got them installed. Just prior to sunset was able to test the rotors. The 40-mtr rotor didn't work. It ended up the section of cable that I ran up the tower with the quick connect plug on it was wired different. I tried switching wires around but no luck. I needed to replace that cable. It was too dark to climb the tower so I went inside to get the computer set up for logging and radio control of my new TS 2000. I almost forgot that I had to switch CQP files to CQP1 (outside CA). Got up Saturday morning to get final items done. Fog had come in during night and the tower was wet. Rather than climb it right away, I ended up hoisting a 160 dipole from the 72' tower and ran a coax to the vertical so I had an 80-mtr antenna. The fog was now gone and tower dried off. I climbed the tower to install the new rotor cable. I unhooked the old cable and accidentally dropped the new one. This meant going down the tower and back up again. I plugged in the cable went back down and spliced it in. Tested it, and it worked fine! Pointed it at CA and turned it off. Finally getting to start contest about 2 hours late.

Had a great time working CQP. Just getting back on the air, I was working the contest SSB only and I ended up with about 375 qs including dupes and dx. The score was about 40K points. 40-mtrs was great even with the antenna only at 22' (I needed to fix the brake on the winch) 20 & 80 were pretty good, I even got a dozen q's on 160, but I was skipping over CA on 10 & 15. So I set a new benchmark to try and beat the next year. By the way, I used KA6BIM/7 for the first year to give time for the databases to catch up. Now I only use the /7 for the CQP and the 7QP to prevent confusion.

Following that came trenching week. Time to install the conduit to the towers and get the wires off the ground. I had the only guy in the area that does trenching come over. Turns out he was 80 yrs old and planned to retire in 3 or 4 years :-). He started at the East tower and worked towards the house. First 150' or so was fine. Then he turned the trencher around and started from the slab by the house to work the other direction. Next thing I know I see black and white pieces of plastic coming up with the dirt. Then something green! Guess what? I now know where they hid the septic tank! It was not where the drawing said it was... The trench was dead center over the tank and damaged the covers, cut a drainpipe and a buried gutter drain line. At least we missed the leach lines. OK, we are through on that side of the house, and off to the other side. At least here I knew where the underground power line was. We went around that, and I had marked the approximate locations of two water lines. The trencher guy said he remembered digging one of them about 10 years earlier. He started at the house, and when he got close to the water lines he lifted the trencher. Made it to the tower with no problems. I spent an afternoon repairing the broken pipes and the damaged septic tank covers. Then I hand dug 50' of trench around the septic tank through gravel and hardpan and managed to get that conduit installed. The following day I hand dug about 25' of trench to the West tower and got the conduit in just before dark. I had fun pulling the lines thru the conduit. I made the turns as gentle as I could. I used 3" conduit and pulled 2 or 3 coaxes, and 2 control lines for the rotor & stack-matches.

Oh the joys of building a new station! KA6BIM/7 was now operational from Oregon. Finally! That is not to say I was done. Far from it. I still had a lot of antenna work to do, and also wanted to get the shack set up for SO2R.

Summer of 2013 I spent working on the homestead. No time for antenna work.

In the fall I made a trip to Truckee to pick up a used 2 element 80-mtr beam. I hauled that home and then had to figure out where I was going to put it. I ended up buying another US Tower 72' crank-up, used, but with a motor drive! I borrowed the trailer again and hauled that home. I also still had my light duty 55' tower to put up. In December, I made a trip up to Portland area to pick up a second 2 element 80-mtr beam. This one was newer and in better condition. (The first one is now available) For my birthday, My XYL bought me a M2 5 element 6-mtr beam. I had never been on 6-mtrs before. In January I setup the 6-mtr beam on a 20' push up mast with Armstrong rotator and worked the last 3 hours of the VHF contest. I managed to work 2 states!

Summer of 2014 was the Summer of Antenna Projects.

Starting in May, I took down the hi-tower and stored it for future use. I hand dug a base for the 50' VHF tower next to the garage and brought in a trailer of cement. The way the winch was set up on the tower, I had to hinge it so that the tower was lying out towards the back side of the house. Since the slope starts just 10' from the tower base. I had to hoist the top end of the tower up about 6' just to be level. Then I attached it to the hinged base. Hoisting it a little farther allowed me to install the antennas. A pair of 11 element Cushcraft 2-mtr beams, the 6-mtr beam, and what the heck, I threw on some cross polarized 440 & 1.2 Gig beams I had scrounged years ago. The tower was up in time for June VHF contest. Also just in time to snag EA7 and EA8 on a brief opening (my only EU and AF 6-mtr contacts so far), later I snagged JA, This fall I worked ZL, VK & FK.

It was now time for my neighborhood back hoe guy to come back up to dig the hole for the 3<sup>rd</sup> (Central) tower. It ended up getting placed by the corner of my shop, a 24x48' metal building. Did I tell you about this guy? He runs a gravel quarry. When I asked him to dig a 5'x5' hole x 8' deep, he said he had not done anything that "small". I think the bucket on his backhoe must have been 3' wide. The holes on the first 2 towers had ended up being about 2 yards larger than planned. This third one came out closer to plan, probably because he had a hard time working right next to the building. I had a cement company deliver 8 yards of cement. The cement was quite dry and when poured, it ended up shifting my tower base. I got that level again, but it twisted 10 degrees off of how I had it planned. The hole took 7.5 yards, so I had him dump the excess in a small sidewalk form I had set up just in case. By the time he poured that ½ yd, I walked back to the tower base and the cement was setting up fast and was too hard to get a smooth finish. I ended up pouring some concrete patch on it later to make it look and drain better. (Do not accept a dry load!)

This tower was planned to be the one that I would put the 80-mtr beam on. However after asking for help on the reflector, it was suggested that it would be better to put my tribanders on this tower and place the 80-mtr on the West 72' tower, away from the metal roof. Also this one was about 100 feet closer to the shack than the other 2 HF towers.

I had 2 KT34xa's up on the West Tower. 1 on top, and 1 halfway up fixed on JA. These would need to come down to put up the 80-mtr beam. I still had 2 more XA's to refurbish and install. I started with that. I put the M2inc upgrade kit on one, along with their new mounting blocks. When I called M2 to get assistance with a simple dimension question, I never got a return call. I must also say that when I tried repeatedly to get info on the 80-mtr beams, I received little if any help. So much for customer service. With that in mind I decided not to spend the \$1600 for 2 more KT36XA upgrades. Their loss. Nice equipment but customer service can greatly improve.

I installed the top KT36XA on the mast above the rotor. I cleaned up and reassembled a KT34XA and side mounted it at the top of the next tower section, fixed on EU. I then took the 2 beams off of the West tower, setting one aside, and then installing the other KT36XA on the Central tower at the top of the next section down, fixed on the Caribbean. Cranked up I have KT36XA@72', KT34XA@54', KT36XA@36' Central Tower is finished!

This November was fun time. Time to put up the 80-mtr beam. I assembled it around the tower, with it just fitting in between the greenhouse, the potting shed, the tower, and the compost pile and hanging over the edge of the ridge. Boy that sucker is big! I rigged the rope system for the hoisting line. This is one I could not do by myself. I put out the word to some of the local hams and scheduled a work party between storms. I had 7 guys show up to help, and at 59, I was the youngest one there. I had 4 guys on tag lines that were looped over each element end, 1 on a tag line to pull the boom away from the tower and 2 on the hoisting line. I put on my climbing belt and went up the tower. The crew hoisted it up and we got it installed in less than an hour. By having the tag lines on the elements we were able to tip it whatever way we needed to help me attach the u-bolts and get it installed and orientated. The hardest part was for me to stand on top of the tower top plate to install the truss, and remove my hoisting system. Before I removed the hoist system though I used the crew to hoist up my last tribander, a KT34XA which is side mounted midway up fixed on JA. I also hoisted up my 160 dipole. I wish this tower was motorized. I think the 80-mtr beam is about 250 lbs.

Well the bulk of the antennas are up. I still need to get something up for 12,17 & 30-mtrs. I am thinking about modifying the 2 element KLM 40-mtr beam for 30-mtrs. Then put it up above the 4 element 40 on the rotor on the East tower. I will need some help figuring out the dimensions. Then I need to pick up a dualbander for 12/17. I can probably put that above the top tribander on the central tower.

In the shack I have my TS870, TS 2000. & 15 yr old Alpha 87a. I still do not have SO2R running for RTTY or CW, but can work it phone. I practiced a bit as W1AW/7 Oregon when I had slow bands assignments. I am running n1mm classic. At the Willamette Valley DX Club meeting last week, we had a presentation on N1MM Plus. It might help me get the SO2R going. When I got the third HF tower up, I rearranged the desk to fit in the new rotor control. I ended up building a new shelf for the rotor controls just above the rigs. That lasted one contest. That had placed the monitors, which were on the shelf above the rotors, a bit too high. I worked a rty contest and could feel the neck strain. So time to rearrange again. I ended up bringing the monitors down to just above the radios, and built a high shelf above the monitors to line up the 4 rotor controls. This is much easier on the neck. Now I need to simplify the coax switching.

That is the story of my little station here in Coos County. I planted the seeds 3 yrs ago and now the aluminum is in full bloom. It works. My last package from the bureau was 5" thick. 10 cards from EU 10 cards from Oceania & Asia, & the rest were JA's .... Did I mention I have a great shot to the West ? I just worked the 10 meter contest last weekend. Although my score wasn't quite as high as K3EST's, N6TV's , W0YK's or N6ZFO's, it was over double my last years score. The station is working.

Since I have moved to Oregon, my participation with NCCC has diminished considerably, especially since my points do not count for the club in most contests. I have become active with the Willamette Valley DX club in Portland, where my efforts can help. Much smaller than NCCC, but it does have some great dedicated testers. I still use the NCCC Reflector & read the Jug to keep up with the news. Retired, now I have a bit more time for radio. I appreciate the camaraderie in the NCCC. The NCCC 2000 Rookie of the Year and 2001 KB2000 Award plaques are proudly displayed on my wall.

See ya on the bands 73's Dave KA6BIM





## VP/CC Corner

Alas, during this past Thanksgiving Holiday, I was unwell and this note will perforce be brief. First off, let me issue a correction: in last months column I listed Rick N6XI as the 2013 winner in the ARRL Sweepstakes CW for the SCV section SO-A(HP). How wrong I was!

Rick N6XI was #1 in the SV section, unlimited class. W1SRD came in second, not first. Alas, undone by the numbers in the ARRL results database query! I'll leave future updates to those more capable.

### Sweepstakes

The 2014 ARRL November Sweepstakes is in the books, and while the final results will not be know for months yet, the NCCC turned in 174 or so logs (I don't have the exact number as the deadline has not passed yet).

This is significantly behind our 2013 effort, while PVRC has increased their participation, so we can be assured we did not win this year. The contest calendar is unrelenting in it's progress, though, so there are several opportunities to compete and submit logs for the NCCC in the coming months.

### Next Contests

Oh, how I wish I had been on the air this past weekend! The propagation for the 2014 edition of CQWW CW seemed fantastic! I may have missed a legendary opportunity.

Let us all hope instead that the propagation continues to be good for the ARRL RTTY RoundUp January 3rd. While the NCCC is not focusing on this contest, we will be coordinating teams for this event.

For those of you not submitting for your local club, please do sign up for one of our teams.

### 2015 NAQP Club Challenge

Beginning January 11, 2015, though, we do have the second of the NCCC Focus Contests for the year: The NAQP Club Challenge! This contest relies heavily on participation, so please plan on getting on the air for all of the NAQP contests in 2015!

There will my copious emails, and I am hoping to contact you all on each mode!

73, Byron N6NUL



# Contest Calendar—December page 1

ARS Spartan Sprint	0200Z-0400Z, Dec 2
QRP Fox Hunt	0200Z-0330Z, Dec 3
CWops Mini-CWT Test	1300Z-1400Z, Dec 3 and 1900Z-2000Z, Dec 3 and 0300Z-0400Z, Dec 5
NRAU 10m Activity Contest	1800Z-1900Z, Dec 4 (CW) and 1900Z-2000Z, Dec 4 (SSB) and 2000Z-2100Z, Dec 4 (FM) and 2100Z-2200Z, Dec 4 (Dig)
NCCC RTTY Sprint	0145Z-0215Z, Dec 5
QRP Fox Hunt	0200Z-0330Z, Dec 5
NCCC Sprint	0230Z-0300Z, Dec 5
ARRL 160-Meter Contest	2200Z, Dec 5 to 1600Z, Dec 7
TARA RTTY Melee	0000Z-2400Z, Dec 6
ARRL EME Contest	0000Z, Dec 6 to 2359Z, Dec 7
Wake-Up!QRP Sprint	0600Z-0629Z, Dec 6 and 0630Z-0659Z, Dec 6 and 0700Z-0729Z, Dec 6 and 0730Z-0800Z, Dec 7
VU International DX Contest	1200Z, Dec 6 to 1200Z, Dec 7
TOPS Activity Contest	1600Z, Dec 6 to 1559Z, Dec 7
EPC Ukraine DX Contest	2000Z, Dec 6 to 1959Z, Dec 7
AWA Bruce Kelley 1929 QSO Party	2300Z, Dec 6 to 2300Z, Dec 7 and 2300Z, Dec 13 to 2300Z, Dec 15
Ten-Meter RTTY Contest	0000Z-2400Z, Dec 7
SARL Digital Contest	1300Z-1600Z, Dec 7
CQC Great Colorado Snowshoe Run	2100Z-2259Z, Dec 7
NAQCC CW Sprint	0130Z-0330Z, Dec 10
QRP Fox Hunt	0200Z-0330Z, Dec 10
CWops Mini-CWT Test	1300Z-1400Z, Dec 10 and 1900Z-2000Z, Dec 10 and 0300Z-0400Z, Dec 12
NCCC RTTY Sprint	0145Z-0215Z, Dec 12
QRP Fox Hunt	0200Z-0330Z, Dec 12



# Contest Calendar—December page 2

NCCC Sprint	0230Z-0300Z, Dec 12
ARRL 10-Meter Contest	0000Z, Dec 13 to 2400Z, Dec 14
SKCC Weekend Sprintathon	1200Z, Dec 13 to 2400Z, Dec 14
International Naval Contest	1600Z, Dec 13 to 1559Z, Dec 14
QRP ARCI Holiday Spirits Homebrew Sprint	2000Z-2359Z, Dec 14
QRP Fox Hunt	0200Z-0330Z, Dec 17
CWops Mini-CWT Test	1300Z-1400Z, Dec 17 and 1900Z-2000Z, Dec 17 and 0300Z-0400Z, Dec 19
NAQCC CW Sprint	0130Z-0330Z, Dec 18
NCCC RTTY Sprint	0145Z-0215Z, Dec 19
QRP Fox Hunt	0200Z-0330Z, Dec 19
NCCC Sprint	0230Z-0300Z, Dec 19
Russian 160-Meter Contest	2000Z-2400Z, Dec 19
AGB-Party Contest	2100Z-2400Z, Dec 19
OK DX RTTY Contest	0000Z-2400Z, Dec 20
Feld Hell Sprint	0000Z-2400Z, Dec 20
Lighthouse Christmas Lights QSO Party	0001Z, Dec 20 to 2359Z, Jan 4
Croatian CW Contest	1400Z, Dec 20 to 1400Z, Dec 21
ARRL Rookie Roundup, CW	1800Z-2359Z, Dec 21
Run for the Bacon QRP Contest	0200Z-0400Z, Dec 22
SKCC Sprint	0000Z-0200Z, Dec 24
CWops Mini-CWT Test	1300Z-1400Z, Dec 24 and 1900Z-2000Z, Dec 24 and 0300Z-0400Z, Dec 26
NCCC RTTY Sprint	0145Z-0215Z, Dec 26
NCCC Sprint	0230Z-0300Z, Dec 26
DARC Christmas Contest	0830Z-1059Z, Dec 26
RAC Winter Contest	0000Z-2359Z, Dec 27
World Wide Iron Ham Contest	1200Z, Dec 27 to 1159Z, Dec 28
Original QRP Contest	1500Z, Dec 27 to 1500Z, Dec 28
Stew Perry Topband Challenge	1500Z, Dec 27 to 1500Z, Dec 28
RAEM Contest	0000Z-1159Z, Dec 28
QRP Fox Hunt	0200Z-0330Z, Dec 31
CWops Mini-CWT Test	1300Z-1400Z, Dec 31 and 1900Z-2000Z, Dec 31 and 0300Z-0400Z, Jan 2

# 12 STORE BUYING POWER

**ANAHEIM, CA**  
(Near Disneyland)  
933 N. Euclid St., 92801  
(714) 638-7373  
**(800) 854-6046**  
Janet, KL7MF, Mgr.  
anaheim@hamradio.com

**BURBANK, CA**  
1525 W. Magnolia Bl., 91506  
(818) 842-1786  
**(877) 892-1748**  
Eric, K6EJC, Mgr.  
Magnolia between  
S. Victory & Buena Vista  
burbank@hamradio.com

**OAKLAND, CA**  
2210 Livingston St., 94606  
(510) 534-5757  
**(877) 892-1745**  
Nick, AN6DX, Mgr.  
I-880 at 23rd Ave. ramp  
oakland@hamradio.com

**SAN DIEGO, CA**  
5375 Kearny Villa Rd., 92123  
(858) 560-4900  
**(877) 520-9623**  
Jerry, N5MCJ, Mgr.  
Hwy. 163 & Claremont Mesa  
sandiego@hamradio.com

**SUNNYVALE, CA**  
510 Lawrence Exp. #102  
94085  
(408) 736-9496  
**(877) 892-1749**  
Jon, K6WV, Mgr.  
So. from Hwy. 101  
sunnyvale@hamradio.com

**NEW CASTLE, DE**  
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1509 N. Dupont Hwy., 19720  
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**(800) 644-4476**  
Ken, W2OHD, Mgr.  
RT.13 1/4 ml. So. I-295  
delaware@hamradio.com

**PORTLAND, OR**  
11705 S.W. Pacific Hwy.  
97223  
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**(800) 765-4267**  
Leon, W7AD, Mgr.  
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## KENWOOD



### TS-2000 HF/VHF/UHF TCVR

- 100W HF, 6M, 2M • 50W 70CM • 10W 1.2GHz w/ opt UT-20 module • Built-in TNC, DX packet cluster
- IF Stage DSP • Backlit front key panel



### TM-281A 2 Mtr Mobile

- 65 Watt • 200 Memories • CTCSS/DCS • MH-Std specs • Hi-quality audio



### TS-590S HF + 6M Transceiver

- 100W HF + 6M • 500 Hz & 2.7 KHz roofing filter
- Built-in auto tuner • Best dynamic range in class
- 32 bit DSP

### TH-F6A 2M/220/440

- Dual channel receive • .1 - 1300 MHz (cell blocked) RX • FM, AM, SSB • 5W 2M/220/440 TX, FM • 435 Memories
- Li-Ion Battery



### TM-V71A 2M/440 Dual Band

- High RF output (50W) • Multiple Scan • Dual receive on same band (VxV, UxU) • Echolink® memory (auto dialer) • Echolink® Sysop mode for node terminal ops

## ICOM

### IC-7000 All Mode Transceiver

- 160-10M/6M/2M/70CM
- 2x DSP • Digital IF filters
- Digital voice recorder
- 2.5" color TFT display



### ID-51A VHF/UHF Dual Band Transceiver

- 5/2.5/1.0/0.5/0.1W Output • RX: 0.52-1.71, 88-174, 380-479 MHz\*\* • AMV FM/FM-N/WFM/DV • 1304 Alphanumeric Memory Chis • Integrated GPS • D-STAR Repeater Directory • IPX7 Submersible



### IC-7600 All Mode Transceiver

- 100W HF/6M Transceiver, gen cov. receiver • Dual DSP 32 bit • Three roofing filters - 3, 6, 15kHz • 5.8 In WQVGA TFT display • Hi-res real time spectrum scope



### IC-V8000 2M Mobile Transceiver

- 75 watts • Dynamic Memory Scan (DMS)
- CTCSS/DCS encode/decode w/ tone scan • Weather alert • Weather channel scan • 200 alphanumeric memories

### ID-880H Analog + Digital Dual Bander D-STAR

- D-STAR DV mode operation • DR (D-STAR repeater) mode • Free software download • GPS A mode for easy D-PRS operation • One touch reply button (DV mode) • Wideband receiver



## YAESU

The radio



### FTDX-3000 100W HF + 6M Transceiver

- 100 Watt HF/6 Meters • Large and wide color LCD display • High Speed Spectrum Scope built-in • 32 bit high speed DSP/Down Conversion 1st IF



### FT-7900R 2M/440 Mobile

- 50W 2M, 45W on 440MHz • Weather Alert • 1000+ Memories • WIRES capability • Wideband receiver (cell blocked)

### FT-60R 2M/440 5W HT

- Wide receiver coverage • AM air band receive • 1000 memory channels w/alpha labels • Huge LCD display • Rugged die-cast, water resistant case • NOAA severe weather alert with alert scan



### FT-450D 100W HF + 6M Transceiver

- 100W HF/6M • Auto tuner built-in • DSP built-in
- 500 memories • DNR, IF Notch, IF Shift



### FT-857D Ultra Compact HF/VHF/UHF

- 100W HF/6M, 50W 2M, 20W UHF • DSP included
- 32 color display • 200 mems • Detachable front panel (5K-87 required)

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