



**Publication of the  
Northern California  
Contest Club**



Issue 512

January 2015

**Inside this issue:**

CQWW	4
VP/CC	7
The Giving Tree	8
Carl AI6V	11
Contest Calendar	12

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:**

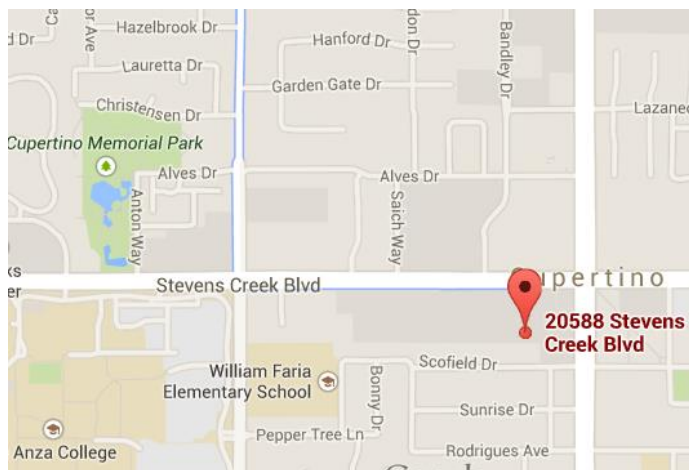
(408) 252-2200

**Time:**

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

**Program**

CW for SSB ops, Rick N6RNO



**President's Report**

To (k)B or not to (k)B:

For the last several years we have made an effort to turn out the membership for various contest, especially Sweepstakes. The efforts have been productive in getting operators on the air who are generally very active but don't like sweepstakes for whatever reason or don't like phone for obvious reasons.

A good example was Bob K6XX who we arm-twisted into 1200 QSO's before he turned off the radio. We were not very productive when it came to the vast numbers of inactive members who did not get on the air. We also had trouble getting some fairly big station properly manned.

This resulted in lower scores for operators who got on from small stations. It seemed to be a valid assumption that poorly equipped operators would jump at the chance to operate from a big station.

Another area where we were very productive was to help station owners upgrade their equipment by giving advice or getting them in touch with sellers of used equipment that would allow upgrading. Unfortunately I am coming to the realization that there is a segment of our membership that think the idea of contesting is to have fun, not win. Furthermore, these ops don't equate having fun with kb'ing, meaning running at high rates.

continued 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
Past President	Alan Eshleman	K6SRZ	doctore@well.com
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
Awards Chair	Joanna Dilley	K6YL	joanna.k6yl@gmail.com
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
jug@nccc.cc	Fred Jensen	K6DGW	k6dgdw@arrl.net
	David Ashworth	NC6P	nc6p@yahoo.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).

In the recent ARRL 160 meter contest, I worked a local ham. After the contest he sent me email asking about what I was using for a 160 meter antenna. I invited him over to see the antenna for himself, which was a 90 foot vertical made of irrigation pipe.

He came over on Sunday near the end of the 10 meter contest. I mentioned to him that I wasn't really in the contest, but merely had some fun running JA's for a few hours and had just 400 QSO's. He seemed to think that was actually a lot of QSO's, but I had to remind him that it was maybe 10% of a winning score. I began to worry that we were not on the same page. Anyway, we walked around the QTH for around an hour while he looked at various towers and things and took a bunch of pictures. He seemed to be very interested in the whole setup, and I was starting to think I had a potential guest op.

But it turned out that every year he operated his KX3 in the 160 meter contest connected to a 40 meter dipole. He didn't even use the dipole as top loading and load up the feedline as a vertical. I started to tell him about N7WG working WAS on 160 QRP from a city lot, but he wasn't interested. He has clearly not caught the kb bug, but rather prefers to "have fun" in contests. He was perfectly content with an highly ineffective station. He even has gone on some county DXpeditions in CQP, but not really gotten the bug.

This sort of attitude explains why there are many operators who operate once a year on field day and rarely get on for other contests. I had been thinking of joining a local club that does field day, but in looking at past scores, I see that most clubs work fewer QSO's that I usually do by myself in class 1B (around 1000). I am beginning to think that these guys are a lost cause.

Perhaps in the future we should identify the highly motivated operators and make sure they can make their best scores by getting them guest op slots at big stations (if they don't already have big stations). This might be augmented by more remote operation. Remote is getting easier and easier these days.

If you have any ideas for amping up future contests, let us know.

Rick N6RK



Please submit articles for submission for the February JUG to Jug editors by Feb 3rd 2015

Email: [jug@nccc.cc](mailto:jug@nccc.cc)

Preferred format: Word, Arial 12pt

# Reflections on the New CQWW Overlay Category

By Andy Faber, AE6Y, P49Y

12-19-14

I normally go down to the station that John Fore, W6LD, and I co-own on Aruba three times a year for contests (typically, one mode each of ARRL DX, WPX, and CQWW, with John having dibs on the other modes, which we rotate year to year). I usually go by myself. My wife, Sandy, is very busy professionally and had only visited once in the 11 years we have owned the cottage. But this year was going to be different, as she was willing to come down for Thanksgiving, along with one daughter, Robin, and her husband, Steve, who live in Charlotte, NC.

So it was shaping up as a lovely family vacation, but the problem was, of course, that CQWW CW ran the weekend after Thanksgiving. This is the granddaddy of CW contests. Since I had won it Low Power in 2012, I felt under some obligation to mount another serious effort. But how to run a 48-hour contest and still socialize with family and not be a zombie for half the vacation?

How provident that K5ZD and the CQ Contest Committee seemed to have thought about my dilemma, and had established a new 24-hour category (the Classic Overlay) for the contest! Presumably, this was done to increase participation among those who want to compete, but have limited time or facilities (or are unable for age or medical reasons to go full bore all weekend), but it was the ideal solution to my dilemma. The category allows only one radio, and no spotting assistance. Because CQWW did not have an "off time" rule, they borrowed such a rule from WPX, which does have required off times. So they count the first 24 hours in your log, with off times required to be one hour in duration.

Since 2013 was the first year for this category, there was very limited history to review to figure out how best to compete in this category. It seemed obvious that the strategy to win the Classic Overlay would be to pick and choose various hours of the 48 within which to operate, in an attempt to maximize run rates while also being on the air when multipliers could be worked on various bands. Sounds simple, but this is clearly a complex problem to try to analyze for any given QTH. Looking at the public logs from high scorers in 2013 showed operating hours generally sprinkled throughout the weekend, with many hours spent mult hunting. (BTW, in a contest like CQWW, where you constantly are balancing one band versus another and mult hunting versus running, you can learn quite a bit by looking at the public logs from your competition.)

This all could provide lots of grist for the mill of a serious student of the subject; however, I decided to greatly simplify the strategy decision. Since my goal was to have an enjoyable and reasonably competitive contest experience but still spend Sunday with the family, my strategy became clear. I decided I'd just operate the first 24 hours, and let the scoring chips fall where they may. Since the contest starts at 8 p.m. local time in Aruba, this meant operating from Friday evening into Saturday evening, getting a good night's sleep and then being ready to go out with the family on Sunday. I suspect this same lack of strategy might be used by a number of Classic Overlay entrants, whose operating hours may be determined more by work and family commitments than by score-maximizing algorithms. In fact, I ended up quitting at 0135Z on Sunday (9:35 p.m. local time Saturday night), after taking some unplanned time off in the early morning hours of Saturday morning.

Of course, this approach gives you only one shot at most bands. Some post-contest reports said, for example, that 160 was better the second night, but there was no second night for me. Fortunately, there were no major radio flares or blackouts during my chosen on times, as there is no good way to make up for such a disturbance within this category.

One aspect of this decision that was a bit unexpected was that it lifted a considerable competitive weight off my shoulders. Our P40L-P49Y station is always a top contender in international contests (for example, 42 worldwide top-three finishes in the last 45 contests, 2010-14), and while that is very gratifying, it also creates some psychological pressure to go all out and do well in each contest. Having made my operating strategy decision, which I could rationalize without guilt as prioritizing family values over the anti-social ethic of single-op contesting, I felt that I could just get on the radio and have fun -- free to enjoy the non-stop action and constant new-mult energy and excitement of CQWW without the nagging worry that I wasn't working hard enough to win.

As it turned out, the 24-hour part was great, but my score would have been better if the 40m antenna hadn't suddenly failed at 0800Z. Not sure what went wrong, as the next day it all seemed to be there physically, but could well be an open feedline issue. Fortunately, I had already spent 2 hours on 40 (which was in great shape) earlier, but missed out on several dozen mults that were expected later. As a result, I ended up with more hours on 80 than on 40 (and more mults: 22/61 zones/countries on 80 versus 17/49 on 40). This is certainly not a score-maximizing approach in CQWW, particularly when 40 was really hopping, but there wasn't much choice.

My one other conscious decision, after some discussions with neighboring Aruba pro W2GD (P40W), was to spend more time hunting for mults (4:40 hours, per the log) than I had in 2012 when I operated low power from here. As a result, I ended up with 100 fewer QSOs after 24 hours than in that contest, but with 120 more mults. I really did miss the second radio though, and several times picked move frequencies blindly that turned out to be very busy. Apologies to those who suffered.

My conclusion on the new Classic Overlay category: It's a keeper. Personally, I would have enjoyed having a second radio to use to look for mults, check band openings, find frequencies for moves, etc., but I can understand the organizers' desire to create a category that simplifies contest clutter. I suspect it will start to be used more and more in the future, and I recommend it to anyone who is time- or equipment-challenged, or just wants to enjoy the Big One without making it a 48-hour ordeal.

Here are some notes on the contest itself: Started on 20, with a 208 hour running on 14023. I knew this would be fun when the very first QSO was with a JA, and in the first three minutes, E2X called in for zone 26 and TF3DC for zone 40. After an hour and a quarter, spent about 15 minutes mult hunting (yielding 15 country mults and 5 zones), then went to 80. Low noise on 80 and lots of EUs.

After 136 Qs on 80, to 160 and a run on 1825. I remember as a low power entrant in 2012, I virtually couldn't run on 160, but it worked well this year with high power and lower noise levels. At one point, when I'd been on 1826 for about five minutes and made a number of contacts, HK1NA started CQing on my frequency. Of course, he is very loud since he is a local, and I'm undoubtedly equally loud to him. Nevertheless, he ignored my requests to QSY and deliberately QRM'd me till I give up and moved away. I recall the same thing happening once before with HK1X, so it may be in that country's standard operating procedures manual.

To 40 at 0325Z and immediately had a raging pileup, with a 204 clock hour in the 0400Z (midnight to one a.m. local) hour. Then tuning around for a half hour yielded 15 country mults and 6 zones. An excursion to 20 for Pacific mults produced zones 30, 31 and 24, but not as many as expected. Back to 80 at 0613Z, then 160 and 80 again. Unfortunately, when I tried 40 at about 0800Z, the 40m yagi was dead. I wasted about 20 minutes trying to diagnose it, and vainly hoping it was a connector problem in the shack. The antenna analyzer was in Robin and Steve's bedroom, and they were sleeping, so I didn't want to wake them. I did try connecting the ant directly to the K3, to no avail. I went back to 80 for a while, but was so dispirited that at 0906Z I decided to take an hour off in frustration. I sat in the chair in the living room, but actually couldn't sleep, though I did take an hour and ten minutes off, returning to the radio at 1017Z.

Although this wasn't what I wanted to do, 80 was enjoyable, and in the next 50 minutes, I actually ran 19 JAs. Their signals were steady, without the usual flutter that makes them hard to decode and slow to run.

On to 10 at 1112Z, but I had difficulty getting strong EUs to hear me, so after a few Qs, I tried 15 instead, which was much better. I basically stayed on 21045 till 1247Z, then did a little tuning around. To 10 at 1345Z for a long run on 28033. Surprisingly at 1420Z, VU4KV called in (zone 26 actually, not 22 like the rest of the VUs, and he later called on 15 as well.).

At 1337Z, after 12 hours of operation, the totals were 160: 173/29/12 (Contacts/Countries/Zones); 80: 433/61/22; 40: 347/49/17; 20: 356/55/32; 15: 352/62/20; 10: 3/2/2. Starting at 1538Z, I tuned around a bit on 10 and got some mults, with the highest one in freq at 28155 (YS1YS, zone 7). The 20Z hour was my best of the contest, 209 on 10 mostly running US, but with a sprinkling of others, including the first JA on ten at 2059Z. Two double mults in a row on 21090 at 2226Z when BY4CD (zone 24) and KH8B (zone 32) called in consecutively. CW Ops CWT regular FG8NY called in on 10 at 1943Z and obligingly moved to 21111 and 14111. I was barefoot on both of those latter frequencies, since the amp was set on 10, but I suddenly got a small pileup on 14111, and was called by eight new countries in the next 10 minutes. That was fun. I bounced around between 15 and 10 running EUs and NAs before finishing out the contest with about two hours on 20.

Final Results: 10:876/28/77; 15:964/34/92; 20:657/36/80; 40:346/17/49; 80:424/22/61; 160:181/12/29. Total: 3448/149/388 for 5.5M points. Conditions really were excellent, as evidenced by 36 zones on 20 in 4 1/2 hours of operating without packet. Also a nice day with the family on Sunday!



## VP/CC Corner

Happy New Year!

The major holidays are all over, a new Gregorian calendar year has begun, and you know what that means! Time for some contesting!

Indeed, I am certain many of you were active in December with Rookie Roundups, Stew Perry, other 160m goodness and of course the many NCCC sprints. This past weekend was the ARRL RTTY RoundUp, and I am looking forward to see how some of the medium sized clubs in our area did in the contest.

As mentioned in past JUG issues, the NCCC only focused on 2 contests for 2014-2015 because of complaints that we had too many. Both from individuals, and from some of the smaller clubs to which our membership also belong. We wanted to distinguish between contests the club participates in (many) and those on which we focus (few) and expect everyone to be on the air.

Of course, Sweepstakes was the first focus event of this season. We will not be victorious in that contest. Lack of participation, not individual scores, was our undoing. Now, we begin the second focus contest of the year: the NAQP Club Challenge!

Participation is a huge factor in this contest series. Last year, the order of the clubs tracked directly with the overall participation numbers. We came in third in participation and overall placement. Our scores were fine, but our participation multiplier lagged behind both PVRC (first place) or SMC (second place). To win the NAQP club challenge this year, we need to increase participation in all modes and on all 6 weekends.

One of the great features of NAQP is that the contests are short. Just 10 hours each spread over 6 weekends. By the time you read this, the CW weekend will have come and gone, and we will be looking forward to the SSB and RTTY weekends.

So heat up the shack and turn on the radios! We can win if we all work together,

73, Byron N6NUL

## The Giving Tree—the Ham Radio Version

By Alan Eshleman, K6SRZ

When we moved to Penngrove seven years ago, one of the things I really liked about the new place was the pair of tall Monterey pines on the North end of the property. The trees topped out over 90 feet. After years of living in Berkeley on the proverbial postage-stamp-sized lot, here was finally the cure to my low band blues.



Down comes the tree

I acquired one of WB6ZXZ's tennis ball launchers [<http://www.antennalaunchers.com/csv19/index.html>] and in short order had both a quarter wave sloping wire on 80 and a 160 inverted L over a spiderweb of buried radials. Results came quickly. DXCC on 160—only a pipedream until then—came in just one winter season and my 80 M totals shot over 200. Things got even better when I added a pair of K9AY receiving loops. The arrangement served me well for six years.

Then came the rains of December 2014. The ground was saturated. At first I thought it was my imagination—that the big, old tree that was my secret weapon on 80—was beginning to nod toward the East. Unfortunately, it wasn't my imagination. The 80 meter wire sagged a little more each day. The tree was leaning.

I showed the tree to a friend, a farmer, who took one look at the tree and said “get rid of it...now”. Monterey pines have shallow root systems in our local soil. I was looking at many tons of slowly



sagging timber with the potential to destroy our out-building, crush my receiving antennas, and probably eliminate a big chunk of my neighbor's fence.



the ominous tilt

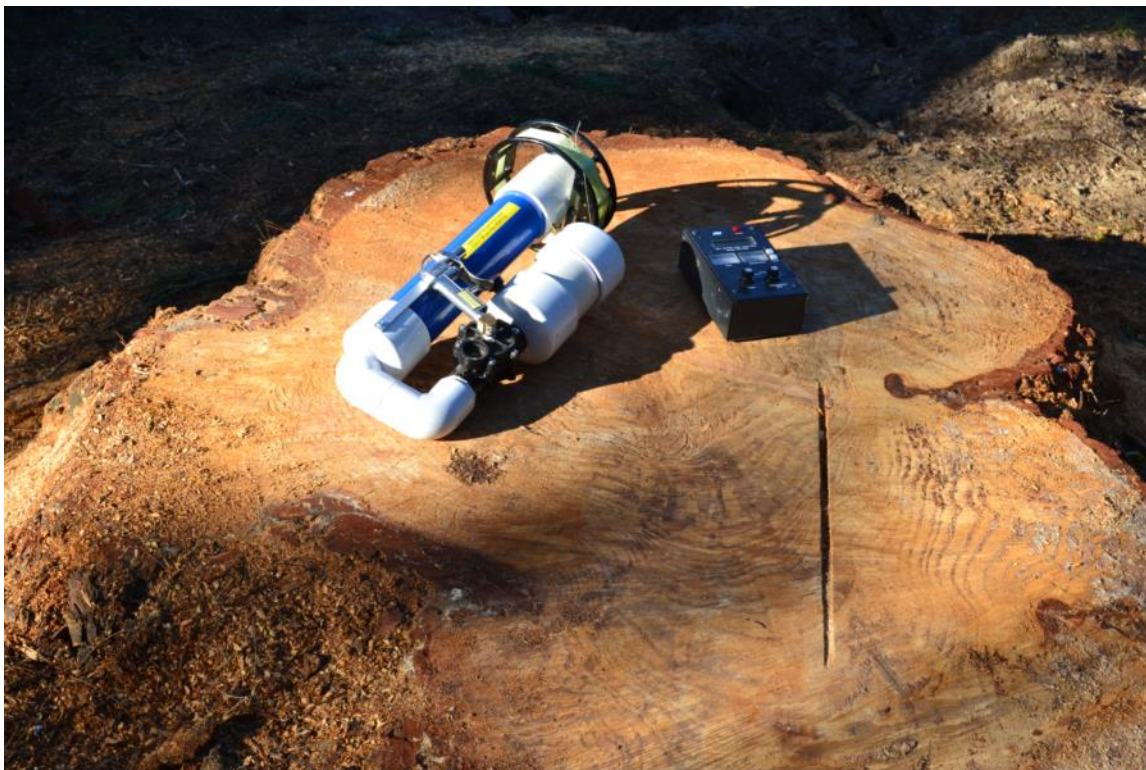
So, for several thousand dollars, and after all the on-the-air pleasure the tree had given me, it was reduced to five-foot diameter stump.

Now, what to do about 80? The other pine was standing further to the West. Out came the trusty tennis ball shooter and up went a new 80 M sloper. I uprooted the old radials and replaced them with a new web of wire. The new antenna had a more acute slope and I wasn't sure how well it would play. I guess EZ-NEC could answer the question, but I opted for the trial-and-error method and the early returns suggest that it works about the same as the old antenna—maybe even a little better for the close-in QSOs.

The big old tree died a hero. I miss it. I don't even want to think about what to I'll do if the other big pine someday needs to come down.

Continued on page 10

The original "Giving Tree"--you may know--was a story by the late Shel Silverstein. At least one critic called Silverstein's book "one of the most divisive books in children's literature." The Wikipedia entry is worth a read.



The Giving Tree with antenna launcher and analyzer

By Alan K6SRZ

## Carl AI6V SK



Dear Family and Friends,

You have probably heard that Carl passed away on December 15, 2014.

A memorial service to celebrate his life will be held on January 11th.

Place: Embassy Suites Hotel, 1345 Treat Blvd, Walnut Creek, CA 94596

Time: 2 PM to 4 PM Hotel phone: [925-934-2500](tel:925-934-2500)

Photos and memorabilia will be on display with Carl's favorite music playing in the background. There will be food, wine and beer to enjoy as we share stories about Carl's amazing life.

You are welcome to dress casually.

Feel free to forward this announcement to others.

Please join us!

Love, Sue

Carl will be missed very much by his large group of friends all around the world.

I've known Carl for more than 35 years and I will miss his zest for life, his enthusiasm and incredible drive -- and most of all, I'll miss his bone-crushing bearhugs whenever and wherever we met.

Sue, I wish you comfort during this trying time. And know that you too are much loved by people all around the globe.

Rest in Peace, dear friend Carl,

Dean, N6BV



# Contest Calendar— January page 1

AGB New Year Snowball Contest	0000Z-0100Z, Jan 1
SARTG New Year RTTY Contest	0800Z-1100Z, Jan 1
AGCW Happy New Year Contest	0900Z-1200Z, Jan 1
AGCW VHF/UHF Contest	1400Z-1700Z, Jan 1 (144) and 1700Z-1800Z, Jan 1 (432)
QRP ARCI New Years Sprint	1500Z-1800Z, Jan 1
NRAU 10m Activity Contest	1800Z-1900Z, Jan 1 (CW) and 1900Z-2000Z, Jan 1 (SSB) and 2000Z-2100Z, Jan 1 (FM) and 2100Z-2200Z, Jan 1 (Dig)
NCCC RTTY Sprint	0145Z-0215Z, Jan 2
QRP Fox Hunt	0200Z-0330Z, Jan 2
NCCC Sprint Ladder	0230Z-0300Z, Jan 2
PODXS 070 Club PSKFest	0000Z-2400Z, Jan 3
WW PMC Contest	1200Z, Jan 3 to 1200Z, Jan 4
ARRL RTTY Roundup	1800Z, Jan 3 to 2400Z, Jan 4
EUCW 160m Contest	2000Z-2300Z, Jan 3 and 0400Z-0700Z, Jan 5
Kid's Day Contest	1800Z-2359Z, Jan 4
ARS Spartan Sprint	0200Z-0400Z, Jan 6
QRP Fox Hunt	0200Z-0330Z, Jan 7
CWops Mini-CWT Test	1300Z-1400Z, Jan 7 and 1900Z-2000Z, Jan 7 and 0300Z-0400Z, Jan 9
NCCC RTTY Sprint	0145Z-0215Z, Jan 9
QRP Fox Hunt	0200Z-0330Z, Jan 9
NCCC Sprint Ladder	0230Z-0300Z, Jan 9
Old New Year Contest	0500Z-0900Z, Jan 10
UBA PSK63 Prefix Contest	1200Z, Jan 10 to 1200Z, Jan 11
SKCC Weekend Sprintathon	1200Z, Jan 10 to 2400Z, Jan 11
North American QSO Party, CW	1800Z, Jan 10 to 0559Z, Jan 11
NRAU-Baltic Contest, SSB	0630Z-0830Z, Jan 11
NRAU-Baltic Contest, CW	0900Z-1100Z, Jan 11
DARC 10-Meter Contest	0900Z-1059Z, Jan 11
Midwinter Contest	1000Z-1400Z, Jan 11



# Contest Calendar— January page 2

QRP Fox Hunt	0200Z-0330Z, Jan 14
CWops Mini-CWT Test	1300Z-1400Z, Jan 14 and 1900Z-2000Z, Jan 14 and 0300Z-0400Z, Jan 16
AWA Linc Cundall Memorial CW Contest	2300Z, Jan 14 to 2300Z, Jan 15 and 2300Z, Jan 17 to 2300Z, Jan 19
NCCC RTTY Sprint	0145Z-0215Z, Jan 16
QRP Fox Hunt	0200Z-0330Z, Jan 16
NCCC Sprint Ladder	0230Z-0300Z, Jan 16
YL-ISSB QSO Party, SSB	0000Z, Jan 17 to 2359Z, Jan 18
LZ Open Contest	0000Z-0400Z, Jan 17
Hungarian DX Contest	1200Z, Jan 17 to 1159Z, Jan 18
North American QSO Party, SSB	1800Z, Jan 17 to 0559Z, Jan 18
Feld Hell Sprint	2000Z-2359Z, Jan 17
Run for the Bacon QRP Contest	0200Z-0400Z, Jan 19
QRP Fox Hunt	0200Z-0330Z, Jan 21
CWops Mini-CWT Test	1300Z-1400Z, Jan 21 and 1900Z-2000Z, Jan 21 and 0300Z-0400Z, Jan 23
NCCC RTTY Sprint	0145Z-0215Z, Jan 23
QRP Fox Hunt	0200Z-0330Z, Jan 23
NCCC Sprint Ladder	0230Z-0300Z, Jan 23
CQ 160-Meter Contest, CW	2200Z, Jan 23 to 2159Z, Jan 25
REF Contest, CW	0600Z, Jan 24 to 1800Z, Jan 25
BARTG RTTY Sprint	1200Z, Jan 24 to 1200Z, Jan 25
ARRL January VHF Contest	1900Z, Jan 24 to 0359Z, Jan 26
SKCC Sprint	0000Z-0200Z, Jan 28
QRP Fox Hunt	0200Z-0330Z, Jan 28
CWops Mini-CWT Test	1300Z-1400Z, Jan 28 and 1900Z-2000Z, Jan 28 and 0300Z-0400Z, Jan 30
NCCC RTTY Sprint	0145Z-0215Z, Jan 30
QRP Fox Hunt	0200Z-0330Z, Jan 30
NCCC Sprint Ladder	0230Z-0300Z, Jan 30
Feld Hell Sprint	0000Z-2359Z, Jan 31
UBA DX Contest, SSB	1300Z, Jan 31 to 1300Z, Feb 1

# 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**  
(Near Philadelphia)  
1509 N. Dupont Hwy., 19720  
(302) 322-7092  
**(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  
(503) 598-0655  
**(800) 765-4267**  
Leon, W7AD, Mgr.  
Tigard-99W exit  
from Hwy. 5 & 217  
portland@hamradio.com

**DENVER, CO**  
8400 E. IIRF Ave. #9, 80231  
(303) 745-7373  
**(800) 444-9476**  
John, W0IG, Mgr.  
denver@hamradio.com

**PHOENIX, AZ**  
10613 N. 43rd Ave., 85029  
(602) 242-3515  
**(800) 559-7388**  
Gary, N7GJ, Mgr.  
Corner of 43rd Ave. & Peoria  
phoenix@hamradio.com

**ATLANTA, GA**  
6071 Buford Hwy., 30340  
(770) 263-0700  
**(800) 444-7927**  
Mark, KJ4VO, Mgr.  
Doraville, 1 ml. no. of I-285  
atlanta@hamradio.com

**WOODBRIIDGE, VA**  
(Near Washington D.C.)  
14803 Build America Dr.  
22191  
(703) 643-1062  
**(800) 444-4799**  
Steve, W4SHS, Mgr.  
Exit 161, I-95, So. to US 1  
virginia@hamradio.com

**SALEM, NH**  
(Near Boston)  
224 N. Broadway, 03079  
(603) 898-3750  
**(800) 444-0047**  
Dave, N1EDU, Mgr.  
Exit 1, I-93,  
28 ml. No. of Boston  
salem@hamradio.com



# HAM RADIO OUTLET

WORLDWIDE DISTRIBUTION

World's  
**LARGEST HAM  
RADIO INVENTORY**  
in stock for quick  
delivery

## 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/al-pha 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)

AZ, CA, CO, GA,  
VA residents add  
sales tax. Prices,  
specifications,  
descriptions,  
subject to change  
without notice.

Come visit us  
online via  
the Internet at  
<http://www.hamradio.com>

#1  
in Customer  
Service

COAST TO COAST  
**FREE SHIPPING**  
UPS - Most Items Over \$100  
Rapid Deliveries From  
The Store Nearest to You!

