



**Publication of the
Northern California
Contest Club**



Issue 539

April 2017



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NCCC June Meeting

Saturday, June 3rd

11:30 AM Social Hour, 12:00 PM Lunch 12:30 PM Program

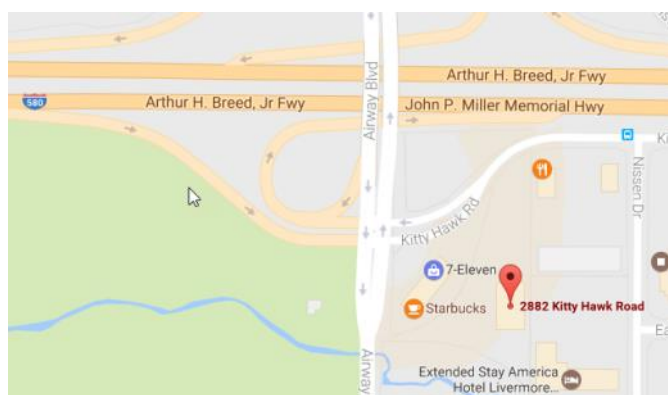
Location

2882 Kitty Hawk Rd, Livermore, CA 94551

Program

- 1) Jim K9YC, Locating stubs for harmonic suppression
- 2) Election of Officers

See You There !



President's Report

Hello KB'ers!

I want to start out by thanking the Co-Chairs of the Visalia International DX Convention, John (K6MM), Kevin (K6TD), and Rich (KE1B). The planning and organization was exceptional. As I was wondering through the halls, I couldn't help but think of the gutsy move these guys did a few years ago by moving IDXC to the Visalia Conference Center. It was a good decision and it really is a terrific venue. Again, thanks to John, Kevin, and Rich for the hard work. They call this a DX convention, and it certainly is since it was sponsored by the Northern California DX Club, but the Co-Chairs are all contesters and contesting certainly was well represented.

It was during the Contest Dinner that I was beginning to rapidly go downhill with what has turned out to be one heck of a cold. I don't get them very often but when I do they are generally not fun. I went straight from Visalia to the National Association of Broadcasters convention, in Las Vegas, and just returned home. Fortunately, I was operating on all cylinders during Friday's Contest Academy. Don (K6GHA) and Tom (KW6S) ran the Basic and Advanced Tracks like finely tuned machines. It was an honor to me to be chosen to preside over the Advanced Track and to also give a brief presentation to start it off. A benefit of presiding over the session was being able to sit in on all of the presentations. K9CT, N6TV, N6WMM, and K6TU were all presenters at the Advanced Academy and each presentation was excellent.

Continued on page 3



Officers:

| | | | |
|-------------------------------|----------------|-------|--------------------------|
| President | Bob Hess | W1RH | w1rh@yahoo.com |
| Vice President /Contest Chair | Steve Dyer | W1SRD | w1srd@arrl.net |
| Treasurer | Dick Wilson | K6LRN | treasurer.nccc@gmail.com |
| Secretary | Ian Parker | W6TCP | secretary.nccc@gmail.com |
| Past President | Rick Karlquist | N6RK | richard@karlquist.com |
| Director | Rusty Epps | W6OAT | w6oat@sbcglobal.net |
| Director: | Rich Cutler | WC6H | wc6h@yahoo.com |
| Director: | Ron Castro | N6IE | ronc@sonic.net |

Volunteers:

| | | | |
|----------------------------|------------------|-------|-----------------------|
| New Member Mentor | Al Rendon | WT6K | wt6k@arrl.net |
| Charter Member | Rusty Epps | W6OAT | w6oat@sbcglobal.net |
| Awards Chair | Gary Johnson | NA6O | gwj@wb9jps.com |
| CQP Chair | Kevin Rowett | K6TD | k6td@arrl.net |
| 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 |
| Webinars | Ian Parker | W6TCP | w6tcpian@gmail.com |
| JUG Editor | Ian Parker | W6TCP | w6tcpian@gmail.com |



NCCC Net

Thursday 8 PM

Freq: 3.610 +/-

NCCC

Visit the meetings page of the NCCC website [here](#) for details of the next meeting

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.

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).

I honestly can't say which one I liked the best. They were all super! Although I didn't hear their talks, K6XX, K6MM, W6SX, W6PH, ND2T, and DL1MGB were the presenters at the Basic Track. ND2T certainly had a very interesting title for his presentation: 5 Ways for Contesters to Lose Weight, Have Better Sex, and Get Invited On A DXpedition. Sure wish I could have heard that one!

WK6I's Contest Dinner was a blast. I believe the total count of attendees was just under 120. The highlight of the dinner was a special performance by The Pin One Problem, led by Ward (N0AX), on mandolin and assisted by Jim (K6JS) on bass guitar, Dave (N6AN) on electric guitar, Alan (K6SRZ) on acoustic guitar, and Saraj (KU6F) on vocals. There were several door prizes, topped by four \$100 DX Engineering gift certificates.

I'm look forward to seeing some of you, along with my East Coast friends, at Dayton in a few weeks.

NCCC is almost a 501 (c) (3)! Ian (W6TCP), Dick (K6LRN), and the Board have been working on this project for a few months. They could not have done it, however, without the assistance of Norm (WB6RVR). Norm has been walking us through the process, which is nearly complete. Actually, the Federal part of the process is complete.

What does a 501 (c) (3) status mean to NCCC? It means that we will be NCCC, Inc., a not-for-profit charitable organization eligible to receive tax deductible contributions. This can mean, for instance, that a plaque sponsorship can be written off by the sponsor. It could also mean that as long as we remain a dues-optional organization, dues could also be written off by the membership. We could also encourage food and/or tent providers for our BBQ's to contribute their goods as a tax deduction. The possibilities are endless. Once everything is signed, sealed and delivered, the Board will set forth the guidelines for tax deductible contributions.

I thought I'd say a few words about Norm, WB6RVR, who has walked us through this process. Norm and I go way back, to our teenage years. The two of us, along with a few other buddies from Sacramento and other parts of Northern California used to be on 80 CW or phone day after day having fun in rapid-fire QSO's. Most of us used home brew equipment. The CW was high speed and the phone QSO's were sometimes just on the edge of being legal. Although it wasn't until nearly 30 years later that I actually got into contesting, it was these rapid-fire CW and phone exchanges that really were the roots of my own contest abilities today. Norm held the post of President of the Northern Amateur Relay Council of California (NARCC) for several years. He has also been very active in the recent hands-free distracted driving legislation re-write. Norm is not a NCCC member, and doesn't consider himself a tester, but he and some of my old high-school buddies still do Field Day every year and they also have been doing the ARRL 160 meter contest as a M/S for many years, always placing high in the Sacramento Valley Section

We still have not received the official word on the 2017 ARRL RTTY Roundup results. I will note that our score was challenged, in accordance with the ARRL's new membership eligibility rules. There were a handful of scores submitted on behalf of NCCC by non-members or members who were not shown on our eligibility list. This is a learning curve for the Club, the members, and the ARRL. In the challenge, we were able to reverse the decision on one of our members who was shown as outside the 175 mile circle when, in fact, he did operate within the circle. I don't see this affecting our ranking in the final results. I'm still crossing my fingers that the gavel will be ours. We should know for sure very soon.

Our next KB Competition contest will be CQWW WPX CW, on the last weekend of May. This is also a NCCC Focus Contest, so get on the air, make points for your Club, and earn points to increase your own rank in the KB Competition.

Rebuilding the 80-Meter Four-Square at N6RO

Gary Johnson, NA6O

For many years, the four-square antenna has been a top performer on 80 m at N6RO. It's age was showing so we decided to rebuild it using better sub-assemblies and a bit of modeling to optimize it for updated SSB and CW center frequencies. It uses wire vertical elements supported by catenaries off of a central tower. At each corner is a feedpoint box at 10 ft elevation. Each vertical has a pair of elevated radials, installed as high as we can. A switchable matching coil for the CW portion of the band is placed in series with the radials (shorted by a relay for SSB). The control box is the popular Comtek ACB-4-A.

The first thing I did was to take careful measurement of each wire, and also check the resonant frequency of each corner. From this data, I was able to estimate updated radial lengths, see if the verticals were equal length (they weren't), and verify that the square was truly square (it wasn't).

An EZNEC model was constructed that included the feedline/phasing line, the CW matching coil, and a common-mode choke at the antenna base. A great deal of information was gleaned from this model in addition to basic wire lengths and feedpoint impedance. First, we can find a good working value for the matching coil and kHz of tuning per turn of the coil. Second, we get the tuning rate when trimming radials (about 20 kHz per foot). Third, I was able to study the performance of the choke and its potential power dissipation.

What happens when there is no choke? The feedlines look much like another radial, though mistuned with a different length. The model indicates that coax shield current could be about 20% of that in a radial, or 300 mA with 400 W applied. This will not only affect tuning, but also invites electrical cross-coupling between the four antennas since they share a common power source. Adding a choke impedance of 6000 ohms reduces the current to <10 mA.

Four-squares present a challenge for choke design because of phasing line length. You need exactly 90 degrees of electrical length at a desired center frequency (here, 3650 kHz). You can't just add an arbitrary bunch of cable wrapped around a stack of toroids; if you use too much cable in the choke, the feedline won't reach the control box at array center! After a discussion with Jim, K9YC, I did some experiments and settled on a stack of two 2.4-inch type 31 toroids wound with 10 bifilar turns of #10 AWG magnet wire. The line impedance was very close to the desired 75 ohms (phasing lines are RG11). About 3.5 feet of wire was required, leaving sufficient coax length. Most importantly, the common-mode impedance was around 6000 ohms, and 80 m was very close to the self-resonance peak, so it was nearly all resistive (Fig. 1). By the way, winding stiff #10 wire around that choke was about all I could handle; it raised a few blisters.

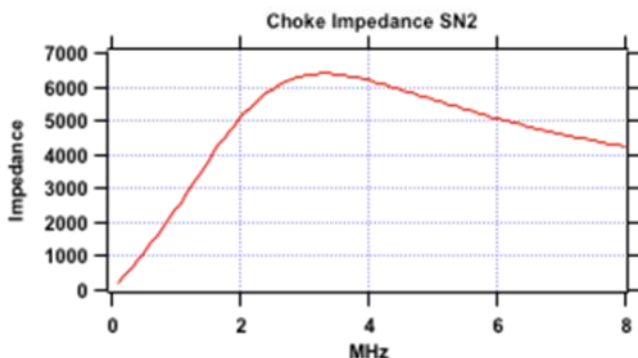


Figure 1. Common-mode impedance of the choke was pleasingly high and almost purely resistive in the 80-meter band.

An often-ignored concern with any common-mode choke is power dissipation. A highly-unbalanced antenna run at high power is a recipe for the Flaming Balun award. Fortunately, the vertical antennas in this application are fairly well balanced. EZNEC showed that under the expect range of operating frequencies and powers, less than 1 W would be dissipated. With unequal radials (off by 2 ft), it increases to 1.5 W. Only with a very short vertical element or a damaged antenna does dissipation become excessive.

Just to be sure, I did a temperature test on an actual choke. I wrapped it with a long length of #28 magnet wire to serve as a heating element, placed it inside a closed container, and measured temperature rise. With 5 W continuous (Fig. 2), I would say there is little danger of destruction nor of reaching the curie point, 130 degC. Another test was run at a rather extreme 30 W (Fig. 3). This was headed for trouble, reaching 70 degC in 13 minutes before I uncovered it, after which it seemed to settle at 65 degC. So here we have some practical data. My final decision was to add vents to the enclosure, considering the fact that the matching coil and relay coil also dissipate a few watts.

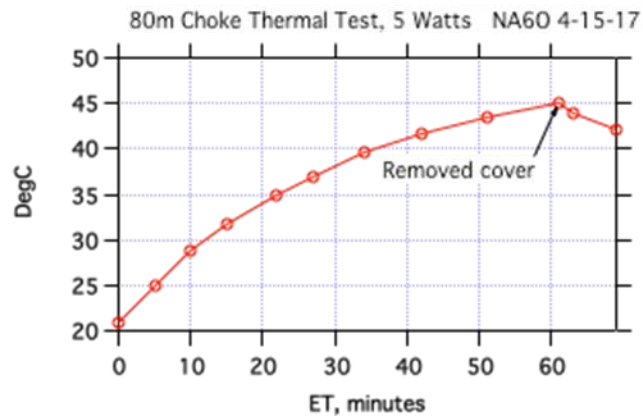


Figure 2. Choke temperature rise with 5 W dissipation. Looks safe enough.

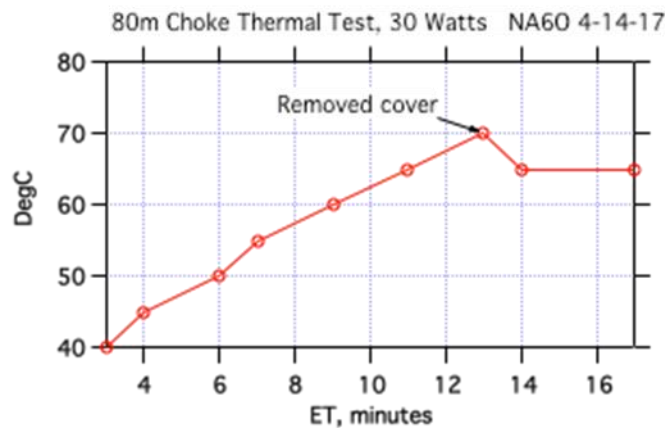


Figure 3. Choke temperature rise with 30 W dissipation. This could be trouble...

Components were assembled into a very rugged 6x6x4 inch plastic electrical enclosure, using all stainless and brass hardware (Fig. 4). A static bleed resistor was added across the antenna. Yes, the SO-239 is genuine Amphenol. All components were high-pot tested to 1.4 kV.

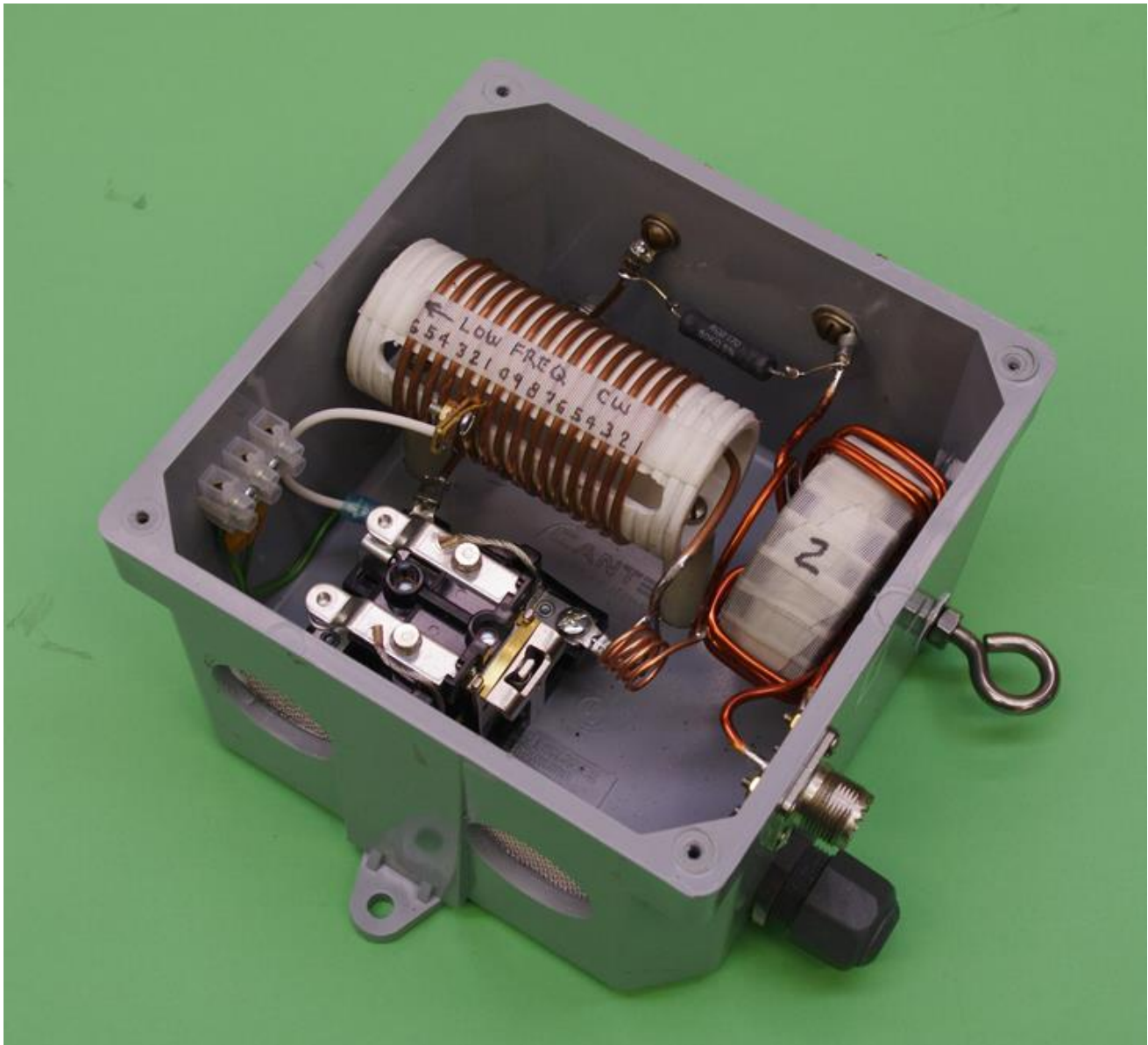


Figure 4. One of the four enclosures. This is what we call CONTEST-READY hardware.

The next step was to fabricate matched phasing lines from RG11. Since the objective is a 90-degree phase shift including the cable, choke, and everything else in the box, that is the configuration I tested end-to-end. By measuring all of that on my N2PK VNA in transmission mode, each set was matched within 0.1 degree at 3650 kHz. That should be good enough! The good news about making my own phasing lines is that I was able to install Kellerm grips at each end so that the cables would not sustain damage when suspended (Fig. 4).

Another run of wire is required to supply 12 VDC to the relay. For this I used 2-conductor direct-burial sprinkler cable. This stuff is cheap (\$108 for 1000 ft on Ebay, \$150 at Home Depot), and its polyethylene jacket will last forever. You can get it with up to 10 conductors (#18 solid). Highly recommended.



Figure 4. Antenna box installed. Feedlines have nice strain reliefs. This should hold up well. If only the wires would survive all that flexing the wind.

At last it was installation time. I am most grateful to Lee, KI6OY, for helping me out in the sun and wind. It took us about 15 hours over two days to complete the project with about half the time spent repairing and adjusting radial lengths. Based on measurements on the previous array, we knew that the individual verticals needed to resonate 50 kHz below the combined array frequency, and that turned out to be right on. Heading to the shack for the smoke test, array resonance for SSB and CW was exactly as predicted and no further adjustments were required. Bandwidth, based on 10% dump power, was almost 300 kHz for each band setting. I believe the reason that it tuned so well was that I used the antenna terminals (the wire ends) as the reference plane for phasing line matching, antenna tuning, and all the modeling work. Ken will be giving it a workout in coming weeks along with an evaluation of directivity. This installation should have a long service life, give or take a few wires that break in the wind.



Figure 5. One corner needed its position adjusted, and a new 4x4 support. Here, Gary earns his PhD (Post Hole Digger).



Figure 6. Lee KI6OY attends to the Comtex box. SO-239s get a coat of Dow DC4 dielectric grease, and a good tightening.

JIDX CW at N6RO



Gary NA6O, Bob K3EST and Ken N6RO

Three operators, three records broken. Operating JIDX CW at N6RO, we broke three single-band records. N6RO on 80, K3EST on 40, and NA6O on 20. Whether we win our categories for the contest this year, only time will tell.

ARRL June VHF Contest



Mike WA6ZTY

ARRL June VHF Contest

K6HS (WA6ZTY, KB6BA, K6HS)

1st Place Pacific Division Multi-Op (there were only 2 Multi-Op entries!)

Overall high score Pacific Division

2nd Place Western Region Multi-Op

-Mike - WA6ZTY - CM98 -

ARRL June VHF Contest

First Place Pacific Division

Rover



Gary KE6QR/R

June VHF Contest 2016

First Place Pacific Division

Rover

Score: 16,483

Gary KE6QR/R

ARRL June VHF Contest

K6SRZ SOHP (6 meters)

First Place SF Section



73 & KB,

Alan/K6SRZ

NCCC Annual KB Competition Rules



Purpose: To provide a means of rewarding NCCC members who are DX contesters, sprinters, VHFers, and especially active contesters.

Time period: The contest year starts March 1. ARRL DX SSB is the first contest of the year. NAQP RTTY is the last.

Eligible contests: Currently, points from 35 contests are counted. See the table on the next page

Scoring: Score = number of contests in which you participated * sum of (points for each contest * each contest's multiplier).

NCCC weekly sprints are special. Points for the entire year are added up, but it is only counted as a single contest.

Multi-ops: Points = total score divided by the number of operators.

Station owners: A station owner who does not participate in a particular contest receives 25% of the points.

Only scores posted to 3830scores.com are counted.

Paid NCCC members may receive awards.

NCCC Annual KB Competition Table

| Contest | Month | Multiplier |
|-----------------------------|--------------|-------------------|
| ARRL RTTY Roundup | January | 50 |
| NAQP Winter CW | January | 50 |
| NAQP Winter SSB | January | 50 |
| NA Sprint Spring CW | February | 100 |
| CQ WPX RTTY | February | 2 |
| ARRL DX Contest CW | February | 5 |
| NAQP Winter RTTY | February | 50 |
| ARRL DX Contest SSB | March | 5 |
| CQ WPX SSB | March | 2 |
| NA Sprint Spring SSB | April | 100 |
| JIDX CW | April | TBD |
| Ontario QSO Party | April | TBD |
| 7th Area QSO Party | May | TBD |
| New England QSO Party | May | TBD |
| CQ WPX CW | May | 2 |
| ARRL June VHF | June | 200 |
| All Asian CW | June | 10 |
| IARU HF World Championships | July | 5 |
| NAQP Summer RTTY | July | 50 |
| NAQP Summer CW | August | 50 |
| NAQP Summer SSB | August | 50 |
| NA Sprint Fall CW | September | 100 |
| CQWW RTTY | September | 1 |
| NA Sprint Fall SSB | October | 100 |
| CQP | October | 20 |
| JARTS RTTY Contest | October | 5 |
| CQWW SSB | October | 1 |
| ARRL Sweepstakes CW | November | 20 |
| ARRL Sweepstakes SSB | November | 20 |
| CQWW CW | November | 1 |
| ARRL 160 Meter Contest | December | 50 |
| 10 Meter RTTY Contest | December | 100 |
| ARRL 10 Meter Contest | December | 10 |
| NCCC Sprint CW | Weekly | 100 |
| NCCC Sprint RTTY | Weekly | 100 |

NCCC Meeting June 3rd

Here are the dates and venue for the June NCCC Meeting.

11:30 AM Social Hour, 12:00 PM Lunch 12:30 PM Program

Location

2882 Kitty Hawk Rd, Livermore, CA 94551

Program

- 1) Jim K9YC, Locating stubs for harmonic suppression
- 2) Election of Officers

Watch the reflector for further details.

Election of Officers

NCCC holds its annual election in June The Board of Directors consists of President, Vice President/Contest Chairman, Secretary/Treasurer, Past President, and three Directors.

If you are interested in any of the BOD positions, please contact John K6MM.

In addition, a volunteer panel steps forward each year to assist the club in its many activities. We're always looking for more volunteers, so if interested, please contact any member of the current BOD.

NCCC Life Membership

NCCC Life Membership is available for a one-off payment of \$250.00

If you would like to apply for life membership, please submit your request using this link [here](#)

Each request will be reviewed by the NCCC BOD at the regular monthly BOD meeting.

For further information, contact Ian W6TCP



WORLD RADIOSPORT TEAM CHAMPIONSHIP JULY 12-16, 2018



Our way to 2018

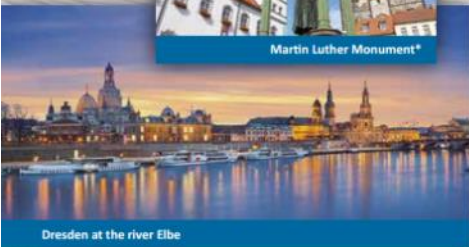
Having been elected to host the WRTC 2018 in Germany is a great honor, a thrill, and a big challenge for us. The critical tasks have been clearly defined. Dedicated and highly motivated teams are addressing the challenges.

For the competition itself we have chosen the Jessen area south of Berlin for its flatness providing level playing fields for all competitors. Jessen is strategically situated between the German capital of Berlin and such fascinating historic cities like Dresden and Leipzig.

Nearby you find important cultural attractions, e.g. the historic city of Wittenberg where Martin Luther launched the Protestant Reformation in 1517. Additionally, the scenic countryside and a lot of entertainment will make the WRTC an exciting experience for families and friends as well.



Martin Luther Monument*



Dresden at the river Elbe

* Source: Lutherstadt Wittenberg Marketing GmbH ©

We need your support!

You need deep pockets to finance such a huge event. Our preliminary cost estimates add up to close to half a million US Dollars and cannot be shouldered by the German contesting fraternity alone. We need substantial financial support of contesters from all over the world, from contest clubs, individuals and business. Any amount is welcome! We will do our level best to translate this support into an event that is worth to take part in - be it as a competitor or spectator, either on the spot or remotely via Internet. You are welcome to donate via PayPal to:

spende@wrtc2018.de

or to use wire transfer (see Web Page for details).

For US taxpayers

The World Wide Radio Operators Foundation (WWROF) is recognized by the IRS as a tax-exempt public charity. In order to be eligible for Income Tax treatment of your donation to WRTC 2018 just contribute to WRTC2018 in one of the following ways, either via PayPal to:

WRTC2018@wwrof.org

or by check - remit and mail to:

WWROF Inc. - WRTC2018 Fund
P O Box 10424
Midland, TX 79702



Note: It is important that mailed contributions include notification that the donation is specifically for WRTC2018.

Contact the WRTC Team

www.wrtc2018.de
contact@wrtc2018.de

E-Mail: contact@wrtc2018.de | Web: www.wrtc2018.de | Facebook: [wrtc2018](https://www.facebook.com/wrtc2018) | Twitter: [wrtc2018](https://twitter.com/wrtc2018)



WORLD RADIOSPORT
TEAM CHAMPIONSHIP

Welcome to Germany!



Proud bronze medalists at WRTC 2014 - Manfred Wolf, DJ5MW and Stefan von Baltz, DL1IAO (Foto: DK9IP)

Competition with Friends

Lifetime Experience

Make it happen!

Contesters' Olympics



WORLD RADIOSPORT TEAM CHAMPIONSHIP

JULY 12-16, 2018



Welcome to Germany

Germany has been awarded to stage the WRTC 2018. The Federal Republic is subdivided into sixteen federal states such as Bavaria or Saxony. Some 80 million inhabitants share a plot of less than 140 thousand square miles, about the size of the US state of Montana. Sometimes the German language is criticized for its harshness; however, a countless number of students around the world start learning German every year as it offers an insight into a fascinating culture and a world ranked economy.

Radiocommunications in Germany



Heinrich Hertz

Here the fundamentals of wireless communication have been developed as young Heinrich Hertz has proved the existence of electromagnetic waves and Nobel Prize Winner Ferdinand Braun introduced the closed tuned circuit as part of the radio transmitter.

The German Hams were late bloomers after all, as only after WWII a more liberal legislation made a wide ham culture possible. Today Germany is the home base of the world's second largest contest community hosted by two notable clubs: the Bavarian Contest Club (BCC) and the Rhein Ruhr DX Association (RRDXA). That is why you will find such a great number of German call signs in your log as well as multipliers from German radio activities like CR3L or VK9LM.



WRTC 2018 in Germany

World Radiosport Team Championships (WRTC) are being held every four years. More than 60 of the best 2-OP-teams from all over the world meet for a competition. Quite different from other radiosport contests, competitors in WRTCs operate with identical power and antennas on level playing fields from the same geographical region eliminating all variables except their own operational skill. Previous WRTCs were held at Seattle/USA (1990), San Francisco/USA (1996), Slovenia (2000), Finland (2002), Brazil (2006), Russia (2010), and New England (2014).

To participate in WRTC 2018 teams have to qualify in up to 28 different HF contests during 2015 and 2016. Qualification started with the ARRL-DX-CW contest 2015.

To watch your own qualification standings and those of all of your competitors or friends at any time, have a look at our website www.wrtc2018.de. The standings are regularly updated after receiving the results from the contest organizers of each qualification contest.

WRTC 2018 Qualification Standings

Category: Submit

Qualification Area: Submit

AP: Submit

Power Class: Submit

Power: Submit

Wants to search a sponsor?

Standings in NA #1 area

Display data calculated on the basis of the both claimed scores and final contest results (when available)

| Area rank | Operator | Qualification Points | Qualified contest entries | Quality mark |
|-----------|----------|----------------------|---------------------------|--------------|
| 1 | DL2 KSLZ | 7889 | 8 | 80.00 |
| 2 | DL2 GRTW | 7202 | 10 | 80.00 |
| 3 | DL2 K000 | 7176 | 8 | 80.00 |
| 4 | DL2 UJ | 6712 | 8 | 80.00 |

WRTC - Fieldday Style



Catch the organizers

The members of the WRTC 2018 Organizing Committee are active in many contests using special event call signs like "DLØWRTC" or "DKØWRTC". They are active on all bands from 160m up to 3 cm from various locations in Germany. They hand out the special DOK "WRTC" for DARC awards.

Enjoy the award program

WRTC 2018 sponsors the "Worked WRTC Qualification Regions" award. You can apply online for the WWQR Award via dci.darc.de. It can be worked on an annual basis in 3 classes, in different modes and on different bands. It shows European radio pioneers on a background in black, red and gold representing the colours of the German flag. Your application will support WRTC 2018 with a small donation.



Germany calling!

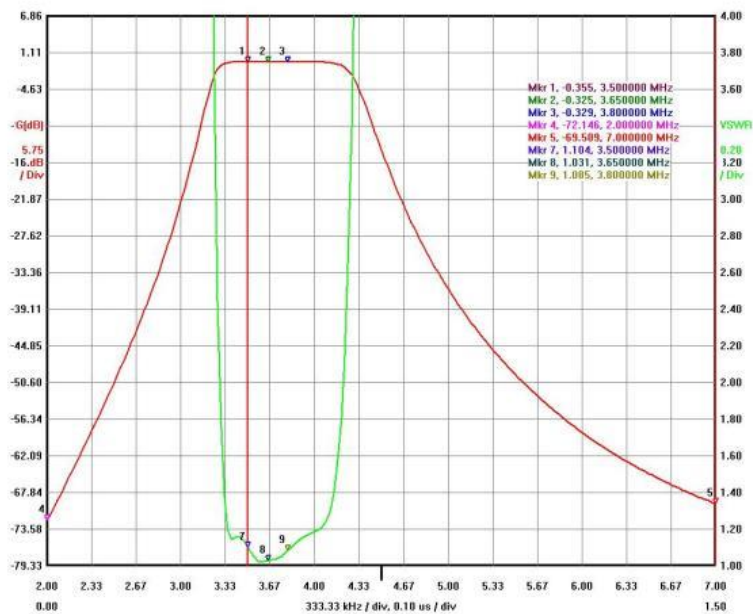
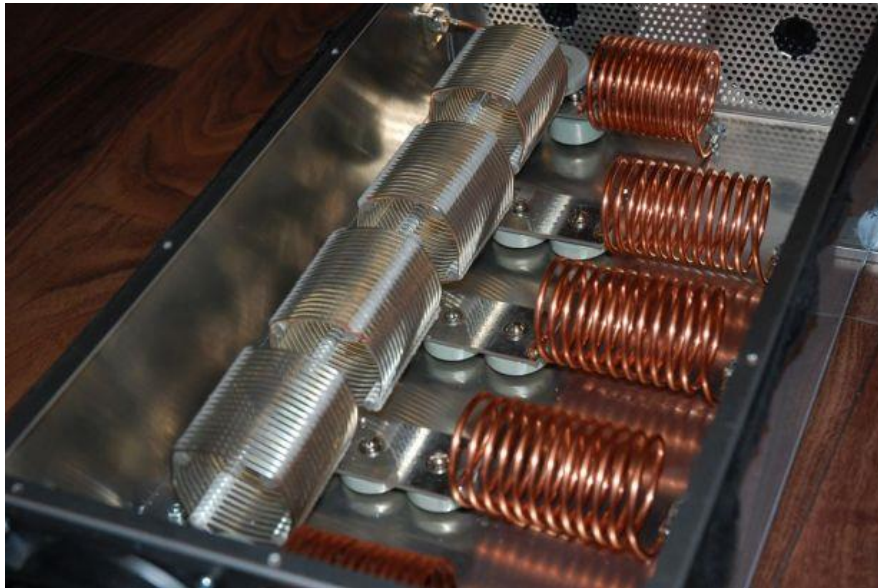
Competition with Friends

Join the Fun

VA6AM High-Power Bandpass Filters and Triplexers

Gary NA6O

I was recently alerted by Steve, K6AW, that there is another maker of high-power filters that is a direct competitor with 4O3A. Pavel, VA6AM, makes a line of filters and triplexers that are conservatively rated for use at multiple KW levels. Like 4O3A, he uses Russian surplus capacitors and big copper coils in large custom enclosures with optional fan cooling. But he also manages to achieve even better specifications and at a lower cost. How does this sound: An 80 m bandpass with 70 dB isolation for 160 and 40 m, and with an insertion loss <math><0.4\text{ dB}</math>, for \$360. That's 15 dB more isolation for \$140 less than 4O3A. Isn't competition great? I had a nice email exchange with Pavel and he is a good engineer who knows how to build things right.



For more information, see <https://va6am.com/>

Point Generator Profile

By Bob, W1RH

What can I say about TV Bob that you don't already know? He's one of the best testers in the world. He's always there with his camera at NCCC events and other major contest related events. He's one of the Club's WinTest experts. He is a CW operator extraordinaire and also a super phone operator. He has won numerous competitions and has the lumber to prove it. He was a competitor in WRTC 1996 and WRTC 2000. He has given many presentations, with a terrific speaking style, at our meetings and at other major contesting venues.

NCCC is so lucky to have Bob as one of our major point generators. Now, more from Bob.

Name/Call Sign: N6TV

Past calls: WN6TLV, WA6TLV. DxPeditons as ON8TV, FO0WA, N6TV/KH6, N6TV/6Y5, YV1/N6TV, YV7/N6TV, S5/N6TV, R3/N6TV

Location: San Jose, CA

How much property do you have? 1/8th acre

Describe your antenna system:

Current: HyGain 5 el 10, 5 el 15 (mod), 5 el 20 (mod), 3 el 40, Force 12 Sigma 180S 80m rotary dipole, Shunt-Fed Tower (Omega Match) on 160m
U.S. Tower HD-589MDPL, 2.5" O.D. 3/8" wall chromoly mast, Create RC5B-3 rotator

Future: 40m Moxon to replace the 3 el HyGain 40?

What's in your shack? (2) Elecraft K3, (2) Alpha 87A, Elecraft KPA500

What are your previous QTH's? Tarzana, CA (until 1975)

If you're working, what is your career? If not, what was your career?

Software engineer, retired from IBM after 36.5 years on 12/31/2015. Also 1 each year at Atlawave (failed startup), and ReplayTV / Sonic|Blue.
Currently self-employed building and selling Y-BOXs for the Elecraft K3 and K3S (see <https://bit.ly/Y-BOX/>)

Married? Kids? Grandkids? Nope.

How many DXCC entities have you worked? 349 (337 current)

What's your favorite contest? CW NA Sprint

Any tips for testers? If your rig does it well, use QSK mode. Also, always use waterfall displays (see presentation links on my QRZ.COM page).

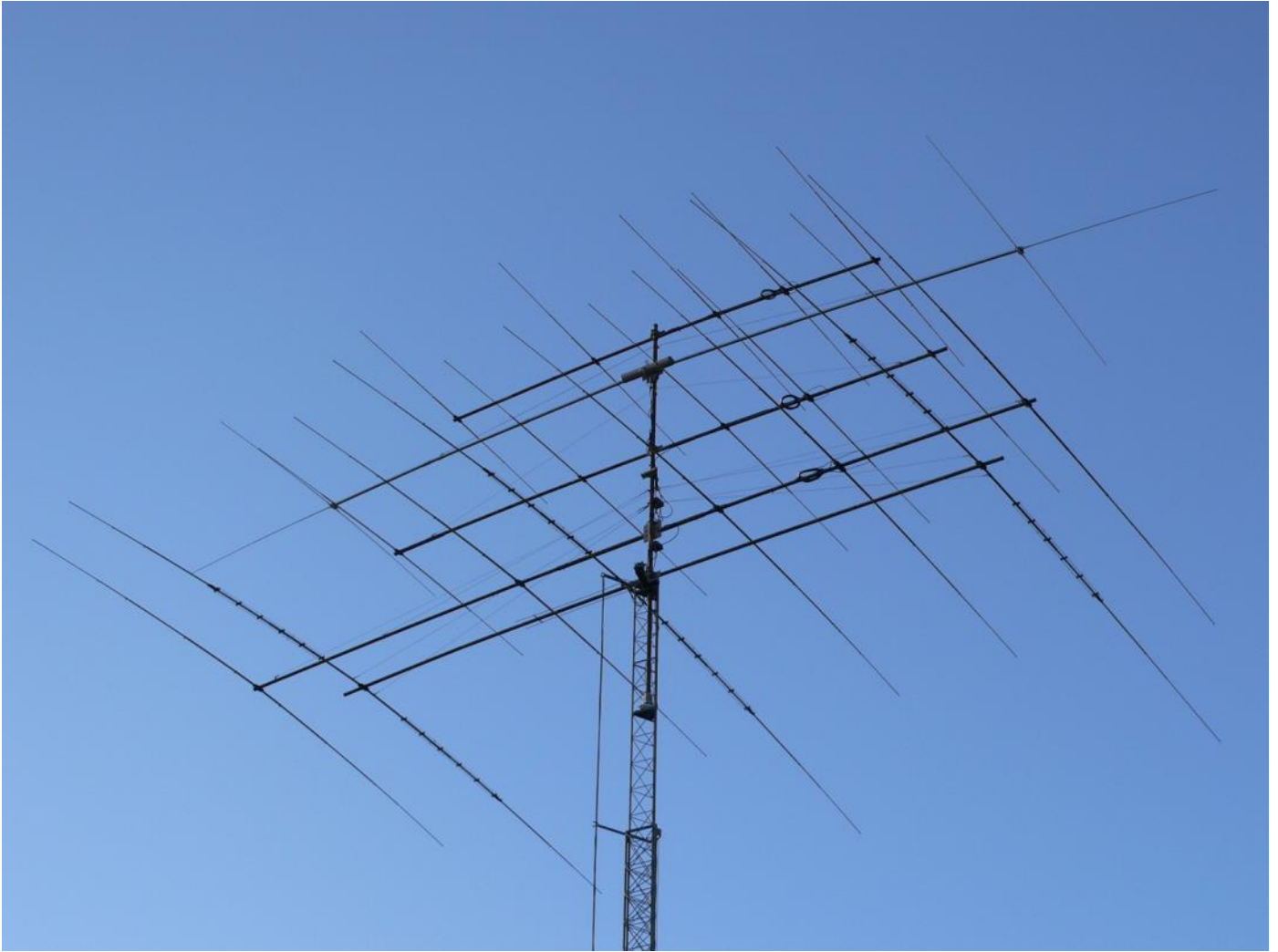
What would you like to see changed in NCCC? More new members, young enthusiastic con-

testers, and predictable meeting dates.

Any other hobbies besides ham radio? Photography, Manualism (see Wikipedia), Dining out.



Photo credit: G0CKV



N6TV Antenna Farm





N6TV Location

TUBE OF THE MONTH

Visit the museum at N6JV.com

Norm N6JV

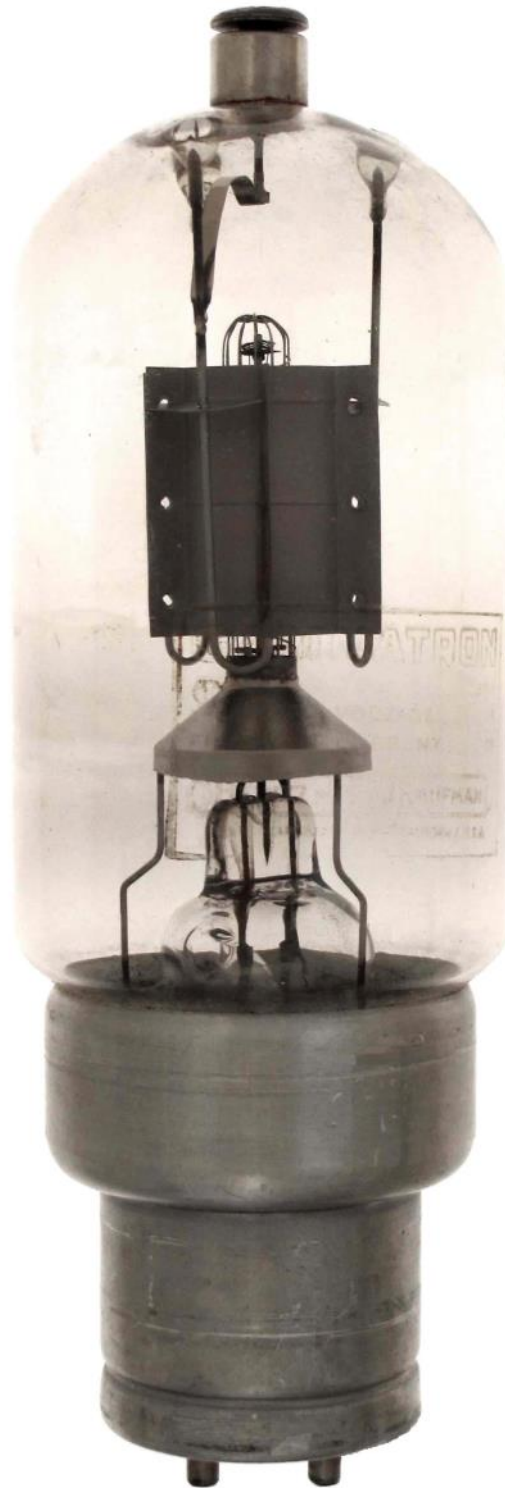
HK-354

In 1934, lots of things were happening in the transmitting tube world. The overturn of RCA's monopoly was making opportunities for several companies. EIMAC had split from Heintz & Kaufman and H&K was now looking to start selling to the public. They needed something to compete with EIMAC. The HK-354 was a well-designed tube with a dissipation of 150 watts and had a grid. H&K no longer had to make the Gridless Gammatrons. Three wide spaced anode supports made the tube very rugged. The success with the 354 prompted H&K to expand the options. If you wanted to use the tube in high frequency work, it could be purchased with a side grid terminal. Eventually they made it with your choice of amplification factor. The original had a mu of 14, but now it was also offered in 9.5, 22, 35 and 50. Each variation was assigned a suffix from A to F. I have found an obscure advertisement that offered to mix and match the features. You could get a 354-F with or without a side grid pin. It keeps tube collectors looking for all the variations. More photos at <http://n6jv.com>.

TUBE OF THE MONTH

Visit the museum at N6JV.com

Norm N6JV



TUBE OF THE MONTH

Visit the museum at N6JV.com

Norm N6JV



Northern California Contest Club Reflector—Guidelines

This reflector is devoted to the discussion of contesting.

This includes contests, station building, dxpeditions, technical questions, contesting questions, amateur radio equipment wants/sales, score posting, amateur radio meetings/conventions, and membership achievements.

This does not include personal attacks, politics, or off-subject posts which will be considered a violation of the Guidelines.

Violations may result in removal of the violator from the reflector and possibly from club membership in good standing.

JUG Articles Wanted!

Without your help we cannot reproduce a quality newsletter so please consider submitting a suitable article!

We welcome any and all relevant articles for inclusion in the JUG.

Deadline is 7 days before month end. Preferred format is MS Word, Arial 12 point and pictures should be full resolution. Send your material to Ian, W6TCP at w6tcpian@gmail.com Don't worry about the formatting, we can take care of that if necessary !



Contest Calendar— May page 1

| | |
|--|--|
| AGCW QRP/QRP Party | 1300Z-1900Z, May 1 |
| RSGB 80m Club Championship, SSB | 1900Z-2030Z, May 1 |
| ARS Spartan Sprint | 0100Z-0300Z, May 2 |
| Phone Fray | 0230Z-0300Z, May 3 |
| CWops Mini-CWT Test | 1300Z-1400Z, May 3 and 1900Z-2000Z, May 3 and 0300Z-0400Z, May 4 |
| 432 MHz Spring Sprint | 1900 local - 2300 local, May 3 |
| MIE 33 Contest | 2300Z, May 3 to 0300Z, May 4 |
| NRAU 10m Activity Contest | 1700Z-1800Z, May 4 (CW) and 1800Z-1900Z, May 4 (SSB) and 1900Z-2000Z, May 4 (FM) and 2000Z-2100Z, May 4 (Dig) |
| NCCC RTTY Sprint | 0145Z-0215Z, May 5 |
| NCCC Sprint | 0230Z-0300Z, May 5 |
| Araucaria VHF Contest | 0000Z, May 6 to 1600Z, May 7 |
| 10-10 Int. Spring Contest, CW | 0001Z, May 6 to 2359Z, May 7 |
| SBMS 2.3 GHz and Up Contest and Club Challenge | 0600 local, May 6 to 2359 local, May 7 |
| Microwave Spring Sprint | 0800-1400 local, May 6 |
| F9AA Cup, PSK | 1200Z, May 6 to 1200Z, May 7 |
| ARI International DX Contest | 1200Z, May 6 to 1159Z, May 7 |
| 7th Call Area QSO Party | 1300Z, May 6 to 0700Z, May 7 |
| Indiana QSO Party | 1500Z, May 6 to 0300Z, May 7 |
| FISTS Spring Slow Speed Sprint | 1700Z-2100Z, May 6 |
| Delaware QSO Party | 1700Z, May 6 to 2359Z, May 7 |
| New England QSO Party | 2000Z, May 6 to 0500Z, May 7 and 1300Z-2400Z, May 7 |



Contest Calendar— May page 2

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|---|---|
| Phone Fray | 0230Z-0300Z, May 10 |
| CWops Mini-CWT Test | 1300Z-1400Z, May 10 and 1900Z-2000Z, May 10 and 0300Z-0400Z, May 11 |
| RSGB 80m Club Championship, Data | 1900Z-2030Z, May 10 |
| NAQCC CW Sprint | 0030Z-0230Z, Apr 11 |
| NCCC RTTY Sprint | 0145Z-0215Z, May 12 |
| NCCC Sprint | 0230Z-0300Z, May 12 |
| Jakarta DX Contest 40m | 1000Z-2200Z, May 13 |
| Portuguese Navy Day Contest | 1100Z, May 13 to 2300Z, May 20 |
| HPC World Wide DX Contest | 1200Z, May 13 to 1159Z, May 14 |
| SKCC Weekend Sprintathon | 1200Z, May 13 to 2400Z, May 14 |
| VOLTA WW RTTY Contest | 1200Z, May 13 to 1200Z, May 14 |
| CQ-M International DX Contest | 1200Z, May 13 to 1159Z, May 14 |
| Arkansas QSO Party | 1400Z, May 13 to 0200Z, May 14 |
| MARAC County Hunters Contest | 1400Z-2400Z, May 13 and 1400Z-2400Z, May 14 |
| FISTS Spring Unlimited Sprint | 1700Z-2100Z, May 13 |
| 50 MHz Spring Sprint | 2300Z, May 13 to 0300Z, May 14 |
| WAB 7 MHz Phone | 1000Z-1400Z, May 14 |
| UA2 QSO Party | 1300Z-1659Z, May 14 |
| 4 States QRP Group Second Sunday Sprint | 0000Z-0200Z, May 15 |
| Phone Fray | 0230Z-0300Z, May 17 |
| CWops Mini-CWT Test | 1300Z-1400Z, May 17 and 1900Z-2000Z, May 17 and 0300Z-0400Z, May 18 |
| NCCC RTTY Sprint | 0145Z-0215Z, May 19 |
| NCCC Sprint | 0230Z-0300Z, May 19 |
| Slobozhansky Sprint Contest | 1800Z-1959Z, May 19 (SSB) and 2000Z-2159Z, May 19 (CW) |
| UN DX Contest | 0600Z-2100Z, May 20 |



Contest Calendar— May page 3

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|------------------------------------|---|
| NZART Sangster Shield Contest | 0800Z-1100Z, May 20 and 0800Z-1100Z, May 21 |
| Aegean RTTY Contest | 1200Z, May 20 to 1200Z, May 21 |
| His Maj. King of Spain Contest, CW | 1200Z, May 20 to 1200Z, May 21 |
| EU PSK DX Contest | 1200Z, May 20 to 1200Z, May 21 |
| Feld Hell Sprint | 1600Z-1759Z, May 20 and 2000Z-2159Z, May 20 |
| Baltic Contest | 2100Z, May 20 to 0200Z, May 21 |
| Run for the Bacon QRP Contest | 0100Z-0300Z, May 22 |
| SKCC Sprint | 0000Z-0200Z, May 24 |
| Phone Fray | 0230Z-0300Z, May 24 |
| CWops Mini-CWT Test | 1300Z-1400Z, May 24 and 1900Z-2000Z, May 24 and 0300Z-0400Z, May 25 |
| RSGB 80m Club Championship, CW | 1900Z-2030Z, May 25 |
| NCCC RTTY Sprint | 0145Z-0215Z, May 26 |
| NCCC Sprint | 0230Z-0300Z, May 26 |
| CQ WW WPX Contest, CW | 0000Z, May 27 to 2359Z, May 28 |
| SARL Digital Contest | 1300Z-1600Z, May 28 |
| QRP ARCI Hootowl Sprint | 2000 local - 2400 local, May 28 |
| Phone Fray | 0230Z-0300Z, May 31 |
| CWops Mini-CWT Test | 1300Z-1400Z, May 31 and 1900Z-2000Z, May 31 and 0300Z-0400Z, Jun 1 |

HAM RADIO OUTLET

Oakland Grand Re-Opening Events

As you may have heard, we recently remodeled our Oakland Ham Radio Outlet Store after consolidating both our Sunnyvale and Oakland Bay Area facilities into one location.

Now it's time to showcase it off to the Northern California Ham Radio Community and what better way to do it than with 3 weekends of Grand Re-Opening Events.

The event runs from 10 AM until 5:30 PM on Saturday and includes Hourly Door Prizes, Exclusive Discounts, Product Demos and Representatives from the Major Manufacturers.

We will also have Finger Food and Drinks for everyone that attends.

The dates of our events will be:

Saturday April 29th - 10 AM to 5:30 PM

Saturday May 6th - 10 AM to 5:30 PM

Saturday June 17th - 10 AM to 5:30 PM

I would greatly appreciate it if you would pass this information along to your club members and we look forward to seeing everyone there.

Best regards,

Luke Rohn
HRO Inc. Corporate – Buyer
Ham Radio Outlet | 110 Tampico Suite 110 | Walnut Creek, CA. 94598
PH: [1-925-933-1771](tel:1-925-933-1771) | FAX: [925-933-1775](tel:925-933-1775) | luke@hamradio.com

HAM RADIO OUTLET

14 STORE BUYING POWER!

ICOM



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-7200 | HF Transceiver

- 160-10M • 100W • Simple & tough with IF DSP • AGC Loop Management • Digital IF Filter • Digital Twin PBT • Digital Noise Reduction • Digital Noise Blanker • USB Port for PC Control



IC-7100 | All Mode Transceiver

- HF/50/144/430/440 MHz Multi-band, Multi-mode, IF DSP • D-STAR DV Mode (Digital Voice + Data) • Intuitive Touch Screen Interface • Built-in RTTY Functions



ID-5100A | VHF/UHF Dual Band Digital Transceiver

- Analog FM/D-Star DV Mode • SD Card Slot for Voice & Data Storage • 50W Output on VHF/UHF Bands • Integrated GPS Receiver • AM Airband Dualwatch • FM Analog/DV Repeater List Function

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** • AM/FM/FM-N/WFM/DV • 1304 Alphanumeric Memory Chls • Integrated GPS • D-STAR Repeater Directory • IPX7 Submersible



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

KENWOOD



TS-590SG | HF/50MHz Transceiver

- Equipped with 500 Hz/2.7 kHz roofing filter as standard • ALC derived from TS-990S eliminating spike issues • Antenna output function (shared with DRV connector) • CW - morse code decoder function



TM-D710G | 2M/440 Dualband

- V+V/V+U/U+U operation • Built-in GPS • Built-in TNC for APRS & DX-Cluster operation • 50W 2M & UHF • 1,000 memories • Dual receive • Green or amber backlight colors • Latest APRS firmware w/new features • Sky Command II remote functions



TM-V71A | 2M/440 Dualband

- High RF output (50W) • Multiple Scan • Dual receive on same band (VxV, UxU) • Echolink® memory (auto dialer) • Echolink® Sysop mode for node terminal ops • Invertible front panel • Choice of green/amber for LCD panel • 104 code digital code squelch



TM-281A | 2 Mtr Mobile

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



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

YAESU
The radio



FT-991 | HF/50MHz/2M/440 Transceiver

- 160 M-440MHz - SSB/CW/FM/C4FM Digital/AM/RTTY/PSK • 100 W (2M/440: 50 Watts) • 3.5" TFT full-color touch panel operation • High speed spectrum scope • Roofing filters: 3kHz & 15kHz • 32-bit high speed floating point IF DSP



FTDX1200 | 100W HF + 6M Transceiver

- Triple Conversion Receiver With 32-bit Floating Point DSP • 40 MHz 1st IF with selectable 3 kHz, 6kHz & 15 kHz Roofing Filters • Optional FFT-1 Supports AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode/Auto Zero-In • Full Color 4.3" TFT Display



FT-450D | A100W HF + 6M Transceiver

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



FTM-400DR | 2M/440 Mobile

- Color display-green, blue, orange, purple, gray • GPS/APRS • Packet 1200/9600 bd ready • Spectrum scope • Bluetooth • MicroSD slot • 500 memory per band



5 Ways to Shop!

- RETAIL LOCATIONS – Store hours 10:00AM - 5:30PM - Closed Sunday
- PHONE – Toll-free phone hours 9:30AM - 5:30PM
- ONLINE – WWW.HAMRADIO.COM
- FAX – All store locations
- MAIL – All store locations

ANAHEIM, CA
(800) 854-6046

OAKLAND, CA
(877) 892-1745

SUNNYVALE, CA
(877) 892-1749

PORTLAND, OR
(800) 765-4267

PHOENIX, AZ
(800) 559-7388

WOODBRIIDGE, VA
(800) 444-4799

PLANO, TX
(877) 455-8750

BURBANK, CA
(877) 892-1748

SAN DIEGO, CA
(877) 520-9623

NEW CASTLE, DE
(800) 644-4476

DENVER, CO
(800) 444-9476

ATLANTA, GA
(800) 444-7927

SALEM, NH
(800) 444-0047

ONLINE STORE
WWW.HAMRADIO.COM

Contact HRO for promotion details. Toll-free including Hawaii, Alaska and Canada. Call will be routed to the nearest store. All HRO 800-lines can assist you. If the first line you call is busy, you may call another. AZ, CA, CO, GA, VA residents add sales tax. Prices, specifications and descriptions subject to change without notice.

New Store!