



March 2016

# QUA CVARC

A Newsletter for the Conejo Valley Amateur Radio Club

## President's Message

Andy Ludlum-KI6NON

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I know it is only March, but it's never too early to start thinking about Field Day, especially this year. Our education team at "CVARC University" has come up with an interesting challenge for the annual event on June 25<sup>th</sup> and 26<sup>th</sup>. It's called the "Triathlon Challenge" and the rules are simple.

1. You must be a current CVARC Member.
2. You make 2 CW contacts using AA6CV (the club's call sign) at Field Day.
3. You make 2 digital contacts using AA6CV at Field Day.
4. You make 2 voice contacts using AA6CV at Field Day.

Don't know CW or digital operation? The faculty and friends of CVARC University will conduct training and there's plenty of time to learn before Field Day. Contact Zak Cohen, N6PK at [n6pk@arrl.net](mailto:n6pk@arrl.net) for more information. Zak is promising a pizza party for all those who are certified as completing the challenge.

We have the results back from the first of our monthly membership surveys. In this first survey we evaluated the club's Holiday Party. We had about a 10% response rate, which is pretty good as surveys go, but I'd like to see us do better. Three quarters of the respondents attended the party.

*Continued on Page 2*

QUA CVARC Newsletter Editor

Norm Campbell-AB6ET

[radioab6et@verizon.net](mailto:radioab6et@verizon.net)

## Club Meeting and Pre-Meeting Dinner, Thursday March 17

The regular club meeting is Thursday, March 17 (always the third Thursday) at the East County Sheriff's Station Community Room at 7:30 p.m. Talk-in coordination on the Bozo repeater, 147.885 (- 127.3).

The guest speaker will be Bill Stein, KC6T who will discuss computer aided antenna design. See notice for more information.

Join fellow club members and the guest speaker at the pre-meeting dinner at the Stonefire Grill, TO Blvd., at 5 p.m. See notice for more information.

## *President's Message, continued from Page 1*

Of those attending, high ratings were giving to the venue, the food and the overall cost of the event. Over half the respondents gave ratings of "excellent." Those who didn't attend, personal schedules, the cost and a general lack of interest were the reasons cited. 77% of the respondents said they were somewhat likely or very likely to attend the event again this year and 62% thought it was a good use of the club's money to pick up some of the costs of the event to lower the ticket prices. This past year the ticket price was \$18 per member.

We want to hear your opinions. We'll be having more surveys and we promise to keep them short. You'll find links in the newsletter and club's Yahoo group.

The club's speakers committee has been busy. We have commitments for programs through August and topics selected well into 2017. You'll find a complete list at <http://www.cvarc.org/> and in the newsletter.

For most of this month, the FCC is seeking your comments on a petition asking the commission to grant lifetime Amateur Radio licenses. The petition comes from an Arizona ham, Mark Krotz, K7MK. He contends administrative costs would be reduced if the FCC didn't have to process what he estimates to be 70,000 renewals a year. He noted the FCC has been issuing lifetime General Radiotelephone Operator licenses since 1985.

I have one of those lifetime General Radiotelephone licenses. When I started out in commercial broadcasting you needed to have a First Class Radiotelephone

Operator license, especially if you were working alone overnight and had to adjust the transmitter. Those licenses were hung on the wall at the radio station and your service record was noted on the back for your renewals every five years.

When the First and Second Class licenses were eliminated, all operators were granted the lifetime General Radiotelephone licenses. Today, they are not even used in broadcasting. But the key difference between the General Radiotelephone license and an Amateur Radio license is that the General Radiotelephone is not a station license and does not come with a call sign.

As you read through the comments posted about K7MK's petition, the biggest objection appears to be the fear lifetime licenses would result in desirable vanity, 1x2 and 2x1 call signs not becoming available after a licensee's death. It does appear to be unwieldy to depend on a silent key's family to notify the FCC or to have the commission's database updated by Social Security death records.

If you'd like to read the comments or file you own online, here's a link:

<http://apps.fcc.gov/ecfs/proceeding/view?name=RM-11760>

I urge you to comment as having an Amateur Radio License is a privilege and something we all worked hard to achieve.

73,

Andy, K16NON

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## **March Member's Survey**

Please participate in this survey gathering information about the monthly club meeting raffle. There are fewer than ten questions and should only take a minute or two.

<https://www.surveymonkey.com/r/6JVHDS3>

***How have you prepared yourself and your radio station for ...  
Lightning?  
Line voltage power spikes?***

## Members Have Done

The February club meeting started off with the pre-meeting dinner at Don Cuco's Restaurant in Moorpark. At least 20 club and family members attended along with the guest speaker, Joe Sirard from the Oxnard office of the National Weather Service.

Later at the meeting, Joe explained the weather patterns of El Niño and La Niña and showed us by PowerPoint the ocean temperatures and current movements which create our weather.

Joe concluded by discussing the value of and training needed to become a volunteer NWS Skywarn Weather Spotter. Joe is the coordinator of the spotters and asked that persons interested take the Spotter School training course at the following website: <http://www.wrh.noaa.gov/lox/spotter/course/>.

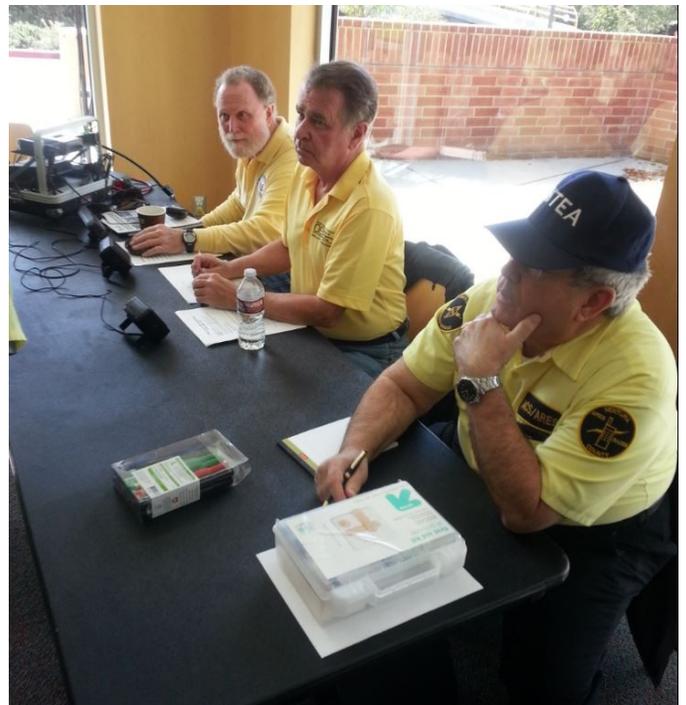
Call or email Joe Sirard at the Oxnard National Weather Service, (805) 988-6615 x451, [joe.sirard@noaa.gov](mailto:joe.sirard@noaa.gov).

On Sunday, March 6, many club members participated in the Thousand Oaks Crop Walk, an ARES event. Hundreds of Thousand Oaks residents walked to combat hunger in our community and worldwide. The event started at the California Lutheran University and took place on local streets between 1 and 3 p.m. The rain abated and the weather was perfect.

Hams participating in the event were: Zak-N6PK, Mike-N6TEA, Tim-K6POI, Andy-KI6NON, Tom-W0UFC, Ken-W6LKX, Dave-KI6YVI, Rob-W6RH, Sue-N6OIZ, Jon-KT6LA, Valerie-KI6KIN, Todd-KD6RCM, Arie-WA6RIE, Brian-K6UGA, Stu-AG6AG.

Net control operators using the Bozo Repeater to coordinate with hams on the Crop Walk circuit. Tim-K6POI, Ken-W6KLX, and Mike-N6TEA.

(Picture by Valerie-KI6KIN)



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## Members Are Doing

Sunday nights, Newbie Net, 7 p.m., Bozo Repeater 147.885 (-127.3), all are welcome especially newer hams. Want to be net control? The procedure will be provided. Contact Todd-KD6RCM, [kd6rcm@arrl.net](mailto:kd6rcm@arrl.net).

Tuesday nights, ARES/RACES net, 7 p.m., Bozo Repeater.

Wednesday nights, HF Roundtable, 7 p.m., 21.333 ±, USB, all are welcome.

Second Thursday, Board meeting, 7:30 p.m., Westlake Village City Hall.

Third Thursday, regular club meeting, 7:30 p.m., East County Sheriff's Station.

*Send me a note if you know a recurring activity that should be listed here. -Ed.*

## Members Are Planning (Calendar)

March 12	Palm Springs Hamfest <a href="http://palmspringshamfest.com/">http://palmspringshamfest.com/</a>
March 12 – 13	South America 10 Meter Contest <a href="http://sa10m.com.ar/cqsa10m_rules.html">http://sa10m.com.ar/cqsa10m_rules.html</a>
March 12 - 13	QCWA QSO Party <a href="http://www.qcwa.org/2016-qso-party-rules.pdf">http://www.qcwa.org/2016-qso-party-rules.pdf</a>
March 17	CVARC General Meeting 7:30 pm East Country Sheriff's Station
March 19 – 20	Baker To Vegas Relay <a href="http://www.radiobaker2vegas.org/">http://www.radiobaker2vegas.org/</a>
March 26 – 27	CQ World-Wide WPX Contest,SSB <a href="http://www.cqwp.com/rules.htm">http://www.cqwp.com/rules.htm</a>
April 3	North American SSB Sprint Contest 0000-0400Z <a href="http://ssbsprint.com/rules/">http://ssbsprint.com/rules/</a>
April 10	License Exams 8:30 am East County Sheriff's Station-Thousand Oaks
April 11	144 Mhz Spring Sprint 7 – 11 pm <a href="https://sites.google.com/site/springvhfupsprints/home/2016-information">https://sites.google.com/site/springvhfupsprints/home/2016-information</a>
April 14	CVARC Board Meeting 7:00 pm
April 15 – 17	International DX Convention -Visalia <a href="http://www.dxconvention.org">http://www.dxconvention.org</a>
April 17	Aut2Run 6:00 am – 12:00 pm Ca.State University, Channel Islands Wayne Francis, <a href="mailto:whfrancis@sbcglobal.net">whfrancis@sbcglobal.net</a>
April 17	One day Tech Class and Exam 9 am – 4 pm Norm Goodkin-Lost Hills Sheriff's Sta. <a href="http://www.hamclass.goodkin.net">http://www.hamclass.goodkin.net</a>
April 17	Rookie Roundup-Phone <a href="http://www.arrl.org/rookie-roundup">http://www.arrl.org/rookie-roundup</a>
April 17	Special Event Station-95 <sup>th</sup> Anniversary of RCA Coast Station WCC Frequencies: 21.050, 14.050, 7.050, 3.550
April 19	222 Mhz Spring Sprint 7 – 11 pm local <a href="https://sites.google.com/site/springvhfupsprints/home/2016-information">https://sites.google.com/site/springvhfupsprints/home/2016-information</a>
April 21	CVARC General Meeting 7:30 pm ECSS Thousand Oaks
April 23 – 24	10-10 Int. Spring Contest, Digital <a href="http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules">http://www.ten-ten.org/index.php/activity/2013-07-22-20-26-48/qso-party-rules</a>

Go to the <http://www.cvarc.org> calendar tab for additional events, links, contact persons, locations and times.

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## Pre-Meeting Dinner

Join your fellow CVARC hams and guests March 17 for the pre-club meeting dinner at 5 p.m. with our guest speaker at the Stonefire Grill, 3635 E. Thousand Oaks Blvd, Thousand Oaks, (in the same center as the Melting Pot), Phone: 805-413-0300. Order at the front when you arrive, and look for the group. As there are no reservations, we hope to take over the large room to the left of the entry. Hope to see you all there!

The pre-meeting dinner for April will be at the at Szechuwan Garden in Moorpark.

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## Club Meeting Guest Speaker

Our March 17 CVARC meeting guest speaker is Bill Stein, KC6T. He will show us his computer-aided design of antennas from the simple single band vertical to a multiband vertical and maybe more. Bill is a highly acclaimed author of home brew projects which have been featured in QST and included in the ARRL Handbook. Licensed since 1955, Bill is an active DXer and HF operator on CW, SSB, and PSK31.

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## You Are Needed

One position on the CVARC board still needs to be filled and that is the vital post of Social Director. Much of the framework has already been provided by Mark-KK6IKX and Michelle-KK6RBW who will be available to coach the new director. Contact President Andy-KI6NON or any board member for more information.

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## Upcoming CVARC Speakers and Topics

Thursday, April 21, 2016 – **Projects:** Ben Kuo, KK6FUT with an overview of projects you can try regardless of your skill level -- from dipoles to simple electronics such as a Pixie CW transceiver in an Altoids tin to more complex projects such as an Arduino SWR meter or a full homebrew 40M SSB transceiver. He'll even show off the loop antenna he put together in 10 minutes using a bicycle wheel!

Thursday, May 19, 2016 - **Ground Is A Myth!** Kristen McIntyre, K6WX. Ground is something you stand on, but in an electrical sense, the meaning is much less clear. When it comes to hams and ground, things get really confused. We drive rods into the earth, but why? Kristen takes a look at whether any of this makes sense, and what theory tells us about "ground" and if it exists in any sensible way at all. We'll talk about DC grounds, RF grounds, and even about gravity.

Thursday, June 16, 2016 - **Field Day Planning & Prep:** Ben Herrera, W6JWZ with an overview of the club's plans for the annual Field Day event June 25-26, 2016.

Thursday, July 21, 2016 - **Field Day Recap:** Ben Herrera, W6JWZ and **Solar Power Applications** in ham radio.

Thursday, August 18, 2016 – **Emergency Preparedness for Hams:** Karl Moody, AE6TO

Thursday, September 15, 2016- **QRP**

Thursday, October 20, 2016 – **Repeaters**, tied to a club tour of a repeater site during the month.

Thursday, November 17, 2016 - **DX-peditions**

December, 2016 – No club meeting. **CVARC Holiday Party**

Thursday, January 19, 2017 - **Microphones**

Thursday, February 16, 2017 – **ATV:** Slow and Fast Scan Television

Thursday, March 16, 2017 - **RFI**

Thursday, April 20, 2017 – **Ham Radio and Rockets, Balloons and Planes**

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## CVARC Library Going Away

In a decision to streamline the club's physical inventory of paper books, the CVARC Board of Directors has decided to donate the collection of books known as the CVARC Library.

President Andy-KI6NON will bring all the books to the club meeting and all are up for the taking by club members.

Many are good reference books, some are slightly out of date, but all are going. Anything left by the end of the club meeting will be donated to the Thousand Oaks Library.

Take advantage of this opportunity to add a few new books to your personal library. Don't make Andy carry them out of the meeting room at the end of the evening.

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## Xubuntu: WSJT-X Update and Time Synchronization with Internet and GPS

Jaap de Goede-KK6LMJ

In the previous publication I wrote about installing WSJT-X for JT65 and JT9. Maybe it didn't work for you because the clock of the Xubuntu system was not synchronized to the world clock. JT65 is heavily dependent on transmitting and receiving messages at the right time. So this time we will make sure Xubuntu is synchronized with a world clock.

Let's install software that synchronizes the Xubuntu clock automatically when there is an Internet connection. Make sure you are connected to the Internet before installing the necessary application. This time we install by using a command prompt in the Xubuntu terminal. To do so, go to the Xubuntu desktop top right and click on the mouse's face on the top right. Then type "Terminal Emulator" and click on its appearance. When the terminal emulator has opened you can download and install the so called Network Time Protocol (NTP) applications. Type "**sudo apt-get install ntp**", enter, and follow on screen instructions. Then type "**ntpq -p**" and something like this should appear:

```
jaap@NP370R:~$ ntpq -p
      remote           refid      st t when poll reach  delay  offset jitter
=====
cheezum.mattnor 129.7.1.66    2 u  43  64   1  46.078 -17.044  0.000
yurizoku.tk    209.51.161.238 2 u  41  64   1 102.530 -16.466  0.000
time.gac.edu   .INIT.       16 u  -  64   0  0.000  0.000  0.000
x.ns.gin.ntt.ne 249.224.99.213 2 u  40  64   1  45.854 -30.823  0.000
juniperberry.ca 193.79.237.14 2 u  38  64   1 152.684 -19.461  0.000
```

Well, that works as long as you are connected to the Internet, but how about if you are not? If your computer's hardware clock is reliable then you don't have to be connected to the Internet when you go in the field. But if your computer's clock is not reliable and you don't have Internet coverage you can use GPS. I use a GPS dongle to synchronize the computer's time to the GPS clock when I'm in the field. I found such a USB dongle for about 25 bucks on Amazon.

To install the software for the GPS function of Xubuntu make sure you are connected to the Internet before installing. Again we install by using a command prompt in the Xubuntu terminal. We can download and install the so called GPS daemon, the application that takes care of enabling GPS in Xubuntu. Type "**sudo apt-get install gpsd**", enter, and follow further instructions. To be able to see if GPS activities are recorded in Xubuntu you should install the GPS tools by typing "**sudo apt-get install gpsd-clients**" enter, and follow further instructions.

Next, carefully make changes to the NTP and GPSD configurations from the Xubuntu terminal.

Step 1, the NTP configuration file

goto the /etc directory: **"cd /etc"** enter

make a backup of the NTP configuration file: **"sudo cp ntp.conf ntp.conf.backup"** enter

edit the NTP configuration file: **"sudo mousepad ntp.conf"** enter

add the following lines to the NTP servers list:

**server 127.127.28.0**

**fudge 127.127.28.0 time1 0.9999 refid GPS**

save and exit

Step 2, the GPS configuration file

goto the /etc/default directory: **"cd /etc/default"** enter

make a backup of the GPS configuration file: **"sudo cp gpsd gpsd.backup"** enter

edit the NTP configuration file: **"sudo mousepad gpsd"** enter

change the following line **GPSD\_OPTIONS=""** to **GPSD\_OPTIONS="-b -n"**

save and exit

Step 3

Reset the system (that's the easiest)

Plug in the GPS dongle

Open the terminal emulator and type **"gpsmon"** enter

You will see the status of the GPS signal received. In general it takes a couple of minutes before the computer's time is synchronized with the Global Positioning System.

```
tcp://localhost:2947 SiRF>
```

```
┌────────── X ───────── Y ───────── Z ─────────── North ─── East ─── Alt ───────────┐
| Pos: -2538700 -4635843 3558304 m  34.12796°-118.7061°  209m  |
| Vel:  0.1  -0.1  0.0 m/s  -0.0  0.2  0.0 climb m/s|
| Time: 2016-02-15T02:45:54.000Z Leap: ??  Heading: 99.3°  0.2 speed m/s|
| Fix: 4 = 9 28 19 17          HDOP: 3.4 M1: 04 M2: 02 |
└────────────────────────── Packet type 2 (0x02) ───────────────────────────┘
| 9 0 0 0 0000 0.0  || 12 = 30 28 17 7 13 11 19 1 4 8 9 5  |
| 10 0 0 0 0000 0.0  | ┌────────── Packet type 13 (0x0D) ───────────┐
| 11 0 0 0 0000 0.0  | ┌── DGPS Status ───────────────────────────┐
└── Packet Type 4 (0x04) ───┘ | SBAS =  |
┌────────── Packet type 27 (0x1B) ───────────────────────────┘
```

Finally we can upgrade WSJT-X. In version 1.6 there are new protocols like Echo and WSPR. To get the package, just surf to <http://physics.princeton.edu/pulsar/k1jt/wsjsx.html>. On that page you will find packages with the latest version and sometimes release candidates. Download the version for Ubuntu and Debian. Remember you will have to download either the i386 (32 bit version) or the amd64 (64 bit version) variation depending on the Xubuntu variation you installed on your computer. After downloading you can open your download folder from the desktop by clicking on the “**Home**” folder and then clicking the “**Downloads**” folder. Now you can double click the WSJT-X package you just downloaded. The Ubuntu Software Center will open and you can install the upgrade. Just ignore the message that the package is not correct; on my laptop it works fine. That's it, have fun.

Jaap de Goede

73 de KK6LMJ

March, 2016

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## CVARC VE Session Report – February 14, 2016

The February CVARC VE session served fourteen candidates. Among those who earned new licenses or upgrades at the session were:

<b>Name</b>	<b>Call</b>	<b>New License Class</b>
Benjamin T. Clark	KM6ASN	Technician
Shinto J. Koshy .	KM6ASM	Technician
Brian E. Thornton	K6UGA	General
Robert B. McQueeney	KK6LME	General
Scott B. Dunbar	KM6ASL	Technician
Bradley J. Tucker	KK6JUJ	Extra
Robert B. Hunley	KK6VQO	General
Kathryn E. Hunley	KK6VQN	General
Steven B. Herleikson	KK6ZIQ	General
Thomas V. Ray	KI6VDQ	General
Frederick L. Pierce	KI6NLG	General
Corey White	KM6AFC	General
Robert Banfill	KK6RWS	General

The next CVARC VE session will be held Sunday, April 10 at 8:30 a.m. at the East Valley Sheriff Station.

CVARC VE sessions are sanctioned by the ARRL VEC and are conducted by a team of experienced Volunteer Examiners. Participating Volunteer Examiners at the February session included: Noel Van Slyke, K6NVS; Jonathan Fox, KT6LA; and Stuart Sheldon, AG6AG. CVARC Volunteer Examiners donate their time to help advance Amateur Radio and their assistance is greatly appreciated. VE sessions are one of the components that help CVARC qualify for the ARRL’s special service club designation.

*Submitted by Jeff Reinhardt AA6JR, CVARC VE Session Coordinator*

## Comments On The ARRL's January 2016 VHF/UHF Contest

**By Pete Heins, N6ZE/Rover**

Each VHF/UHF contest provides different challenges, achievements, and a chance to communicate directly with fellow VHF/UHFers. (The ARRL January VHF Contest does not permit use of Repeaters.)

The January 2016 ARRL VHF Contest presented me with some unusual challenges due to "Murphy" providing many hours of problems!

My grand Roving plan was to activate 4 grids on 5 bands so as to qualify in the Rover (Unlimited) class: I succeeded in activating three grids instead of four, but I did manage to make QSOs on the 6 meter, 2 meter, 125 cm, 70 cm, and 33 cm bands.

I had hoped to make some QSOs with CVARC's "Winter Field Day" operations, but I had to leave the Thousand Oaks area before the contest began.

During the drive from Thousand Oaks, CA, (DM04ne) to the Los Angeles International Airport, I transmitted on 6 m, 2 m, 125 cm, and 70 cm from the Pacific Coast Highway in Malibu, CA. During a 10 minute operating period, I heard nothing from my location at an athletic field near Pepperdine University, Malibu, CA (DM04), about one half hour into the contest. Scratch one grid. This was "Murphy's" first appearance of the weekend.

I was able to operate for a few minutes from an LAX Airport Parking Lot (DM03): I made two local 6 meter QSOs and two 2 meter QSOs before going to the departure gate to board an airliner to Seattle, WA.

I made no attempts on Saturday night to operate while driving from Sea-Tac Airport, WA to Whidbey Island, WA. Whidbey Island is about 25 miles North of Seattle.

I got up early Sunday morning to operate from Grid CN88ra along the Whidbey Island shoreline to attempt to work WW7D/7 who was participating in the Summits On The Air (SOTA) Program from atop 1200 foot Mt. Erie, some 30 miles North of me. I could visually see the mountain top, I knew that I might be able to achieve QSOs with Darryl, WW7D/7. WW7D had decided to spend about 30 minutes on Sunday morning to operate as WW7D/SOTA so that he could provide a mountain peak on the 4 lower VHF/UHF bands as well as 903 MHz (33 cm). Despite the 40 degree temperature and a bit of wind, I was determined to make a rare 33 cm FM QSO. I succeeded in making contact with WW7D/SOTA on both 33 cm and 6 m, but failed on 2 m, 125 cm, & 70 cm. Later when Darryl changed equipment to become WW7D/Rover, we completed QSOs on the four lower VHF/UHF bands. During the course of the day, I made over a dozen QSOs with Darryl on various bands and from various grid locations.

To complicate my I contesting efforts, "Murphy" continued to strike with glee for the rest of the contest period:

Wind chill was unpleasant as mentioned earlier, BUT additionally:

I could not open the squelch on my ancient 100 watt 2 meter multi-mode rig for the entire contest period. On Sunday morning, I ended up using an FT817 (2 watt rig) and whip while standing outside of my truck, holding the radio, logging, and trying to stay warm. On Sunday afternoon, I operated from the South end of Whidbey Island on a 500 ft ridgeline in CN87tw. I could see the Cascade Mountains amongst snow showers and rain showers. I sat inside my truck and used the FT817 with a roof mounted two meter 5/8 wave magnetic mount antenna. The Anderson power connector for the rig mated poorly during entire contest so I kept losing power to the radio and had to continually reboot it!

My 'best' rig was for 6 m: an old FT100 at 100W with a 1/4 wave mag mount. (The 2 m and 70 cm section of the radio has been inoperative for several years.)

For 223.5 MHz (1.25 m) FM: I used an ALINCO DJ-G29 with a 1/4 wave rubber-duckie whip: It was a 'handheld' at all times. Hint: Don't try to program the radio during a contest!

On the 70cm band, I also used the FT817 and the 2m 5/8 whip. On Sunday afternoon, when I sat inside the truck to be out of the weather, the 2 m 5/8 whip performed very poorly when used on 70 cm! (I had used a Madol telescoping whip on Sunday morning, but had to wave my radio around in the cool breeze!)

903 MHz (33 cm): I used my ALINCO DJ-G29 with whip as a hand held radio at all times. I managed to make 2 QSOs on that band in 2 different grids.

Other than using 100 watts on 6 meters, my transmitted power level on 2 m, 1.25 m, 70 cm, and 33 cm was 2 watts and whip antennas were the only choices available. (Just remember that a poor antenna is better than no antenna). I made many QSOs with Members of the Pacific Northwest VHF Society (PNWVHFS) and caught up with recent VHF exploits.

Results:

As an Unlimited Rover entry, I made a total of 76 QSOs, worked 22 grids on 5 bands, activated 3 grids, and made a score of 2350 points. For scoring purposes, my entry lists the Western Washington Section of the Northwest Division.

6 meters (50MHz)	2 meters (144 MHz)	125 cm (223.5 MHz)	70 cm (432 MHz)	33 cm (927.5 MHz)	BAND
34	28	4	8	2	QSOs
7	7	4	2	2	GRIDS
34	28	8	16	8	POINTS

Would I operate in a future VHF/UHF contest with such marginal gear and results? YEP! This is what makes ham radio fun for me (most of the time!)

I hope to see you on the air during the Spring VHF Sprint Contests during the month of April.

de N6ZE

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## RF Power Safety Calculator

Are you concerned about how close you are to your antenna and if it's causing harmful radiation? Take a look at this link to a power safety calculator. [http://hintlink.com/power\\_density.htm](http://hintlink.com/power_density.htm)

More discussion about amateur radio RF exposure is available from the ARRL.

<http://www.arrl.org/fcc-rf-exposure-regulations-the-station-evaluation>

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## Throwback Radio Review: The Heathkit HW-16 CW Transceiver

Ben Kuo-KK6FUT

HW-16

Year First Introduced: 1967

Bands: 80m, 40m, 15m

Features: CW 90W, 75W Novice

Made in: United States, kit built

Technology: Tube, Xtal Control

Power: 120VAC



### Introduction

Once upon a time – before I was born! – new radio operators were forced to operate in the restricted “Novice” band, and were not only restricted to a narrow band of frequencies and bands, they also were made to operate only “crystal controlled” – on a fixed frequency using a single crystal, using a power input of not more than 75 watts. Into that world came the **Heathkit HW-16 C.W. Transceiver**, a ham radio transceiver which specifically ran on the allowable 80m, 40m, and 15m bands, with limited power output, and only a crystal controlled transmitter with CW operation only.

I was fortunate to run into one of these transceivers, and get it back on to the air this year, after purchasing this dusty rig from a local electronics recycling scavenger. After some arm wrestling, I managed to also get the various crystals associated with the radio and spare tubes, and set about trying to figure out how to get it back on the air. With the assistance of Norm, AB6ET, we quickly dusted off this old relic of the Novice age, powered it up slowly on a variac, and sorted through the crystals—and voila! All was up and running!

The Heathkit HW-16 is an interesting creature, one which—although it is a transceiver—really is made up of two parts. Those two parts are a VFO-controlled receiver, which covers the lower 250kHz (or 250kc if you are of the same era as this rig), which is 7.000 to 7.250 on 40m, which is separately controlled by a VFO knob on the right side of the front panel, and a crystal controlled transmitter, which uses two separate crystal holders to select your output frequency.

## What is Crystal Control?

For those of you born into the world of VFOs, where any frequency is just a spin of the dial away – crystal control might come as a shock. Instead of wandering anywhere in the band your ham radio license allows, rigs of this era for Novices were restricted to a **single** (I repeat), single frequency. That meant (and means, if you use the Heathkit HW-16) – no dialing around to find someone calling CQ, no zero beating a CW signal, no flipping through the bands and getting an easy contact. No, you either had to be lucky enough to find someone with the same crystal frequency you had (small odds, that), or you would call CQ on your measly one frequency-- or answer someone else's CQ somewhere far off on the band, and hope they might run across you. Either that, or if you were lucky and rich enough to own a large collection of crystals, maybe—just maybe—you might have a frequency near enough to that distant DX station, that they might come back to your call and make a contact!

To make things even more complex, in order to operate on 15m, the Heathkit HW-16 uses a crystal tripling circuit, which takes those 40m crystals, multiplies them by 3, and you end up (somewhere) in the 15m band. In today's band plan, that's out in the middle of nowhere (random locations in the voice band, digital, etc.) – which makes it a bit tough to find a contact, if 15m is even open!

## Toobs, Toobs, and More Toobs!

The Heathkit HW-16 is all tubes. No semiconductors here! (you'll note that the first, widely available commercial op amp, the first analog semiconductors to reach the market, was introduced in 1964 by Fairchild, not a whole lot of years before). The transmitter side of the HW-16 uses a grand total of three tubes – two, 6CL6, and one 6GE5 final. The receiver uses 6 tubes, including 6EW6, 6EA8, 12AX7, and 6HF8 tubes. You'll note the popular 12AX7, which continues to be popular today with audiophiles, and is known for that “tube sound” on guitar amplifiers – which lends itself to the nice sounding audio output of the HW-16.

## Pros: Dirt Simple CW

So, what are the pros of such a vintage rig? Well, it's definitely one of simplest transmitters you can buy, and pretty much is almost a homebrew transmitter (3 tubes!). Plug it in, tune for maximum smoke (tune up for the loudest noise and watts out on your wattmeter), and you're on the air! Plug in your key, and you are on the air!

Audio quality on the CW receive is surprisingly good, given the vintage. The all tube audio chain means that tones are clear, easy to pick out of the noise, and the VFO allows you to center yourself on any signal choose.

It's also easy to work on a radio of this vintage; either your tubes work, or don't, and most of the issues with a radio of this age are due to aging capacitors or rusty contacts.

The HW-16 has a built in power supply – plug it into AC, and go! That contrasts with many Heathkit transceivers of the age, which required a separate power supply.

Finally, being an all-tube rig, it does generate some significant heat... Perfect for warming up the garage on a cold day!

## Cons: Where Are We, Exactly, and Why Are You Chirping At Me?

All the simplicity of the HW-16 above, and there are some notable cons.

The biggest, is – yes – it's crystal controlled. That means, you either have to be lucky and EXACTLY on a station (by accident) to answer a CQ, or you have to call CQ yourself. I found in practice, that no one tunes around anymore to see if someone slightly off frequency is returning your CQ... They are basically stuck whether they are and expect you can navigate there with your VFO and zero beat. So, no jumping on that DX – just not what people do anymore. So I had to call CQ. That worked fine, except for the second con: figuring out where you are on receive!

You'll note that the receiver really is a separate radio in the HW-16, which means you can spin your dial around everywhere and anywhere it can go. The only problem, is that there is no reference to your own signal! If you have a 7.059 crystal in, you can't (because of the analog dial and the vagaries of the knobs) just punch in "7.059". Due to drifting tubes, calibration, etc., the only way to figure out where to put your receiver to match your transmitter is to plug in a dummy load, key down, and hunt for your own signal leaking through!!! Doing so makes it very hard to figure out if you're calling CQ on top of someone else (did that), if your transmitter drifted (good luck!), or if someone is talking to you or someone else.

Finally, there is the chirping. Nearly every station I contacted on the HW-16 mentioned it was a bit "chirpy". Now, that could be because of aging – old capacitors are known to make tube radios chirp a bit, and we did not replace the capacitors in this rig (not too hard, but replacement multi-segment caps can be expensive). It also could be due to design – three tube transmitters can be a bit chirpy, and anyone who has homebrewed a tube transmitter knows they are likely to have some chirp in their signal. It's not too bad once the operator on the other side figures out you're running a transceiver from 1967, but until then... Yes, they'll tell you are chirpy!

### Summary

#### Pros:

- Simple throwback rig for CW
- Surprisingly good receive audio
- Fun to work something so old
- Keeps the garage warm on a cold day!

#### Cons:

- Crystal controlled transmitter is a challenge to use
- Separate receiver/transceiver frequency makes it hard to find yourself
- Chirpy transmitter

### Summary

The Heathkit HW-16 is an interesting radio from the Novice age, with a lot of attendant quirks. It's a tough radio to operate if you're not familiar with how those old Novice transceivers used to work, but it's fun for nostalgia's sake. It's also dirt simple to repair and adjust, and if it's a cold day it's a great heater!

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## Newbie Net Control Operator List

Sunday nights, Newbie Net, 7 p.m., Bozo Repeater 147.885 (-127.3), all are welcome especially newer hams. Want to be net control? The procedure will be provided. Contact Todd-KD6RCM, [kd6rcm@arrl.net](mailto:kd6rcm@arrl.net).

This is the updated Newbie Net Control schedule for March/April-2016

3/6-Dante, KK6JCQ

3/13-Arie, WA6RIE

3/20-Bob, W6CJX

3/27-Stu, AG6AG

4/3-Ben, W6JWZ

4/10-Bob, W6CJX

4/17-Todd, KD6RCM

4/24-Stu, AG6AG

If you think of a topic you want to cover let me know in advance and I'll put it out in the reminders so that people can think about what questions they want to ask, maybe even an educational trivia question.

If I put you on the wrong date or you need to change your schedule send an email or text me at (805) 844-8708.

Thanks!

Todd-KD6RCM

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## Family Resonance

David-KA9WMI receives expert assistance adjusting his antenna with the aid of his grandson Woodrow.

Woodrow and guest speaker Bill Stein-KC6T may compare antenna notes about tuning and bandwidth at a future date.



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## For Sale

New in the box, Icom IC-7200  
\$800, local in Thousand Oaks

Jonathan Handler, KA6USA  
818-259-9944

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## Daylight Time

Move your local time clocks ahead one hour this weekend, March 13, for Daylight Savings Time.

Coordinated Universal Time (UTC) does not change.

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## For CW Enthusiasts...

In addition to looking at other messages on the CVARC Yahoo discussion group site , check the recent post by Rob-W6RH about CW timing and rhythm.

He provides a link to a YouTube video of an entertaining Army Training film that discusses various techniques of sending Morse Code that will help you become a skilled CW operator to include timing of characters, the rhythm of sending, adjusting the hand key, and writing letters more efficiently when receiving.

Watch for the giant hand.

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## ***Newsletter Editor's Reminder***

*In order to save costs and confusion, and to provide a wider distribution, the QUA CVARC newsletter will only be available on the club website. A reminder link will be sent to the CVARC Yahoo discussion group when the newsletter is published, usually the weekend after the Board of Directors meeting and before the regular club meeting.*

*Direct access to newsletters is available on the website under the Resources tab which will take you to all the newsletters that are current and archived.*

*Information, stories, projects, and club member news or events is welcomed. Send me what you have and I'll print it. If you need help with a story I'll work on it with you.*

*If anyone recently sent me an email with information that did not get printed or was not acknowledged with a return email, please send it again. I apologize that my email was not working for a short time and I may have missed some messages.*

Norm-AB6ET, [radioab6et@verizon.net](mailto:radioab6et@verizon.net)

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# **General Information about the Conejo Valley Amateur Radio Club, CVARC**

## **CVARC is a Special Service Club (SSC)**

The Conejo Valley Amateur Radio Club is an ARRL affiliated Special Service Club. To be recognized by the ARRL as a Special Service Club, the club must regularly show that it is actively involved in certain areas, including: New Ham Development and Training, Public Relations, Emergency Communications, Technical Advancement, and Operating Activities.

## **Meetings and Location**

Meetings are held on the third Thursday of every month, except December. The meeting location is the Community Room at the East County Sheriff Station, 2101 E. Olsen Road, Thousand Oaks. Meetings start at 7:30 p.m. with a pre-meeting social and technical assistance session beforehand or as announced. Meetings are open to the public, and members are encouraged to bring friends.

Visitors are always welcome at our monthly meetings, and we do not pressure newcomers to join. If, however, you would like to support the club and its activities by becoming a member then we will be pleased to have you join.

## **CVARC Membership Rates**

The simplest way to join (or to renew) is to give a check bearing your name and address to the Treasurer in person or by mail. Make the check payable to "CVARC" and please put your call sign and email address on the memo line.

Current annual rates are: Regular Membership \$25. Family Membership \$30. Special discounts are available for new members (licensed in the last 12 months) \$10. Full-time Students \$10. Regular members renewing for multiple years \$20/year. Family members renewing for multiple years \$25/year. An application to join is found on the club website.

Name, call sign, or address changes may be e-mailed to the Treasurer.

## **QUA CVARC**

"QUA CVARC" is the club newsletter published monthly, not later than the Monday preceding the CVARC club meeting, by the Conejo Valley Amateur Radio Club, AA6CV, PO Box 2093, Thousand Oaks, CA 91358-2093.

Opinions expressed in articles in this newsletter are those of the authors and do not necessarily represent the views of the club, its board, or its members.

## **Tax Deductible Donations to CVARC**

CVARC is an IRS-certified 501(c)3 charitable organization and donations are deductible pursuant to IRS rules. If you have working radio equipment or ancillary equipment that you can and wish to donate to the club, please contact one of the board members and we will be happy to talk to you about the process to help fund and grow CVARC.

We cannot accept certain donations, and have to place some restrictions on them such as, no hazardous materials, nothing we could not sell, etc. If you are interested in donating, contact any board member at a meeting or via email.

Many companies will either grant or match employee's gifts to non-profit organizations like CVARC. Please determine if your company is among these and contact a board member for more details.

**For the current list of CVARC officers together with their contact information, please visit the club's web-site at <http://www.cvarc.org>. You may view past newsletters on the website.**