RF

ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LIII NO. 03 **P.O. BOX 3454, TUSTIN, CA 92781-3454** **March 2012**

The Prez Sez.....

by Paul W6GMU

Howdy, All!

March is bringing us better (warmer) weather and, thusly, more outdoor activity possibilities, such as antenna installations, repairs, and/or upgrades. And there's also Field Day. Hopefully some of you have given thought as to how you might fit into that picture, which can always use lots more pixels (team members). Thanks to George, N6VNI, our Field Day site has been secured.

Our VP Carl N8AE is doing a great job organizing this year's FD activity and, along with his wife Dee N8UZE are the main points of contact for volunteering to join the OCARC FD team. Other points of contact are any other Board member or Club member.

During our March 16th General Meeting, we'll hear from famous DXpeditioner Arnie Shatz, N6HC who will present a talk and slide show on the very successful DXpedition to Kiritimati (Christmas Island). This one was my all-time favorite as they were always copiable, fun to work and REAL DX!

See y'all at the Meeting!

73 de Paul W6GMU
The "Prez"

Next Meeting

The next general OCARC meeting will be March 16th.

Our speaker will be Arnie Shatz N6HC, presenting on his experiences with the Kiritimati DXpedition in 2011. See http://www.t32c.com/ for a sneak preview of the expedition.

The next general meeting will be on:

Friday, March 16th
@ 7:00 PM

As usual, we will be meeting in the east Red Cross Building, Room 208. See you there!

In This Issue: **Page**

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www.W6ZE.org

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Monthly Events:

General Meeting:
Third Friday of the month
at 7:00 PM
American Red Cross
601 N. Golden Circle Dr.
(Near Tustin Ave. & 4th St.)
Santa Ana, CA

Club Breakfast:
Second Saturday of every
month at 8:00 AM
Jagerhaus Restaurant
2525 E. Ball Road
(Ball exit off 57-Freeway)
Anaheim, CA

Club Nets (Listen for **W6ZE**):
28.375 ± MHz SSB
Wed- 7:30 PM - 8:30 PM
Bob AF6C, Net Control

146.55 MHz Simplex FM
Wed- 8:30 PM - 9:30 PM
Bob, WB6IXN, Net Control

7.086 ± MHz CW **OCWN**
Sun- 9:00 AM – 10 AM
John WA6RND, Net Control

VISIT OUR WEB SITE

http://www.w6ze.org

for up-to-the-minute club information, the latest membership rosters, special activities, back issues of RF, links to ham-related sites, vendors and manufacturers, pictures of club events and much much more.

Club Dues:
Regular Members	...$20
Family Members*	...$10
Teenage Members	..$10
Club Badge**	…….$3

Dues run from Jan thru Dec and are prorated for new members.

*Additional members in the family of a regular member pay the family rate up to $30 per family.

**There is a $1.50 charge if you'd like to have your badge mailed to you.

TechTalk98

iSDR – Software Defined Radio for iPad & iPhone
"There is an app for SDR..."

by Ken Konechy W6HHC

Hams are entering into a digital world of communications. In my mind, it probably started with packet radio (at least the data were ones and zeros). Then the ham digital comm world moved along further with the increasing use of Digital Signal Processing (DSP) processors and PSK31 using soundcards. This entrance into a digital world for hams continues on with D-STAR, Software Defined Radio (SDR) and Digital-ATV (DATV). The most exciting technical area for ham radio is probably Software Defined Radio. This article provides a brief introduction to Software-Defined-Radio and an overview of doing SDR-to-iPAD using a free app called iSDR.

Introduction to Software-Defined-Radio

First, let me explain that Software Defined Radio does NOT mean that SDR does only digital modulations. SDR receives normal analog voice (SSB) and CW just as well as PSK31 (BPSK) and QPSK digital modulation, etc. The advantage has been provided by DSP processor chips that are very fast at performing mathematical equations called Fast Fourier Transforms (FFT's). (NOTE – relax! -- no heavy math is included in this article). So by doing these FFT equations on a processor, you can eliminate many old electrical components (like inductors and tuning capacitors and crystal filters) and perform their functions better in software. Get it? – software defined radios!!

Let's look at the basic concepts of a SDR receiver. I will make a three-step journey to reach a true SDR receiver. In **Fig 1**, the RF signal at 14.001 MHz mixes with the tunable Local Oscillator (LO) frequency of 14.000 MHZ to produce a difference frequency of 1 KHz. All of the other signals coming out of the mixer are filtered out by a Low Pass Filter (LPF). In this case the mixer is an analog RF front-end.

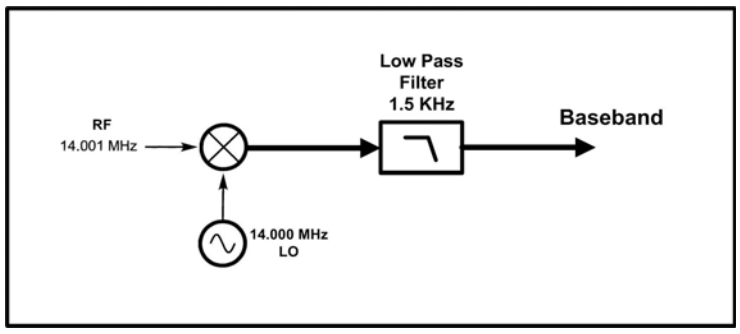


Figure 1 – A simple analog direct-conversion receiver using a mixer to obtain baseband audio

In **Fig 2** I introduce the concept of sampling the RF signal in "quadrature"…which sort of means two RF voltage samples that are 90 degrees of phase apart from each other.

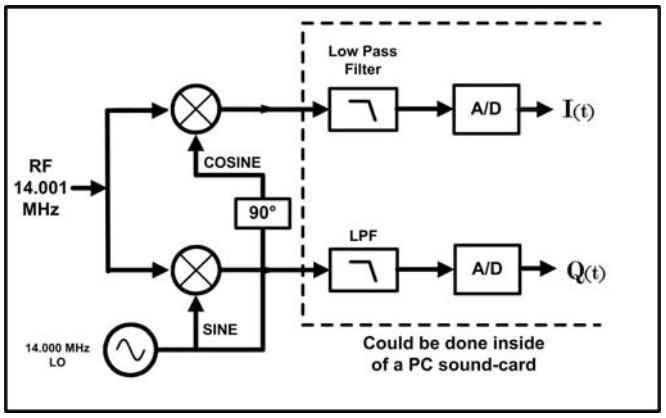


Figure 2 – Two analog mixers have the LO signal shifted by 90 degrees. The output of the mixers can create I and Q streams.

In **Fig 2**, the I and Q audio streams can be used by a DSP processor in a soundcard to perform the necessary Fast Fourier Transform math to produce the correct output.

Finally in **Fig 3** there is a block diagram of a typical modern SDR receiver. The heart of this design is to

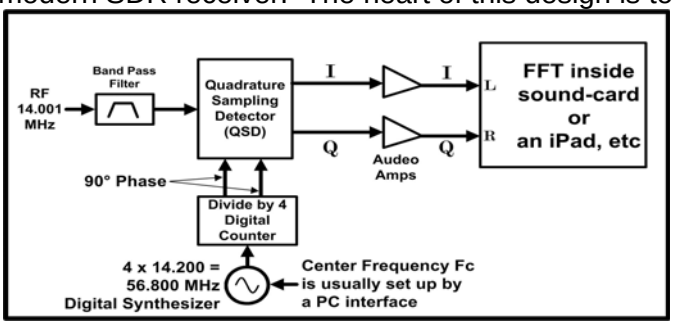


Figure 3 – A fully digital SDR receiver using a QSD RF detector and full FFT processing of IQ datastream

use a digital RF sampling chip, called a Quadrature Sampling Detector (QSD) that was invented by Dan Tayloe N7VE, who was working for Motorola. Inside the chip are four "sample-and-hold" circuits that charge a cap to hold the voltage of the RF signal, when the sample was taken. Each of the samples are 90 degrees apart at the center sampling frequency, Fc. This simple detector then outputs two baseband audio streams (I for "in phase" and Q for "quadrature phase" – aka 90 degrees) to a circuit ready to perform FFT processing. As **Fig 3** shows, the FFT processing can be performed by a DSP processor inside a soundcard or as we will see below by an iPad.

There are even more approaches to SDR, like the HPSDR ham project (Hi Performance SDR) where the RF signal is sampled at 2X the frequency by an Analog-to-Digital Converter (ADC), directly at the antenna.

Free iSDR app on iTunes

Charles Scharlau, NZØI, of Digital Confections has provided an app called **iSDR** free of charge as a gift to the Amateur Radio community! The iSDR app will run on an iPhone, iPad or iPod Touch. The iSDR app can be downloaded (free) from the Apple iTunes Store at:

http://itunes.apple.com/us/app/isdr/id480077371?mt=8

Fig 4 is a block diagram showing a complete SDR receiver using the iSDR app on your iPad or iPhone. The "front end" RF unit shown can be a low cost-SDR kit

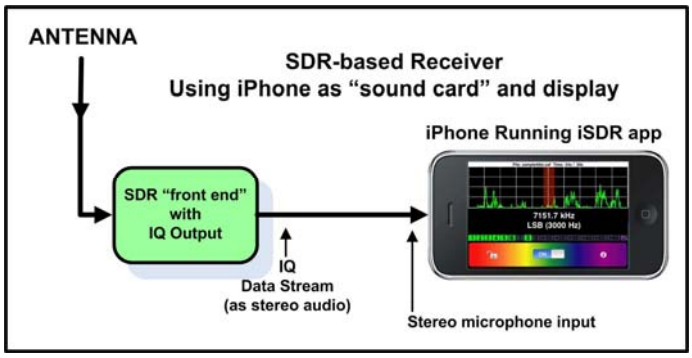


Figure 4 – Block Diagram for complete SDR Receiver using iPhone as "sound card" and Display

like the SoftRock-Lite-40 SDR 40M receiver kit ($19) from Tony Parks KB9YIG or the model LD-1A ($287) assembled SDR receiver from Lazy Dog Engineering (links are at the end of this article). It is interesting to note that the iPad and iPhone do NOT contain a DSP chip for sound. All of the Fast Fourier Transform processing is performed executing the FFT algorithms on the standard Apple processor. Just plug the stereo IQ audio stream into the microphone jack.

Fig 5 and **Fig 6** show the Spectrum View and the

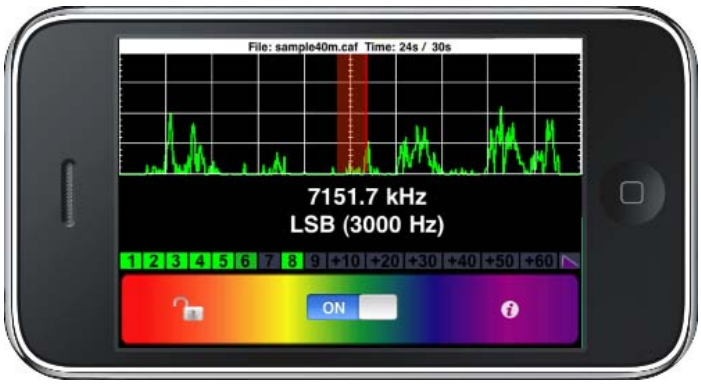


Figure 5 – The iSDR provides a Spectrum View of Received Signals with built-in S-meter.

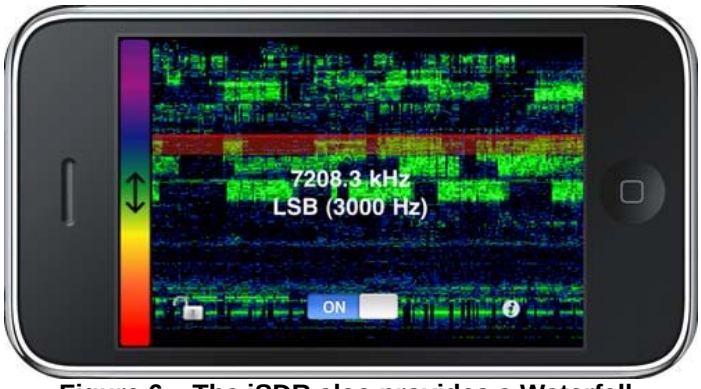


Figure 6 – The iSDR also provides a Waterfall View of Received Signals.

Waterfall View available with the iSDR app. You can use the iPhone touch screen to "tune" to the signal that you are interested in hearing. Finally, **Fig 7** shows a complete station that uses the iSDR approach. Item 1 in **Fig 7** is a custom-made 80m direction finding antenna and Item 2 is the SoftRock v6.2 Lite 80M receiver.

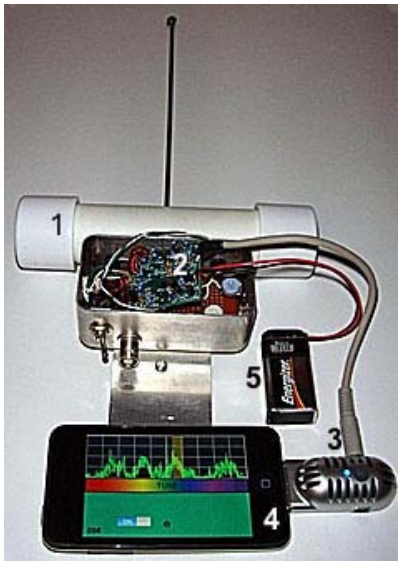


Fig 7 - Could this be the smallest complete QSD-type software-defined receiving station in the world? (Courtesy of Charles NZØI)

Some iSDR Limitations

Because iSDR uses the internal Apple processor, be aware that older Apple products had slower processors. iSDR **is NOT RECOMMENDED** for use on the older iPhone 3G or iPod touch 2nd Gen - Although iSDR will install and launch successfully on those devices, they do not have the processing horsepower to keep up with the demands that iSDR places on the CPU. Sluggish performance and severe audio distortion may result.

Currently, iSDR allows six receive mode settings: USB, LSB, CW, AM, FM and Binaural. However, FM mode is not supported for monaural signals, and will not appear as a mode selection unless stereo audio (live or recorded) is available. Narrow band FM only: 16 kHz or 11.2 kHz bandwidth.

Conclusion

I think the iSDR is a terrific example of the new types of digital technologies that will be available to ham radio in the near future. I hope the Software Defined Radio overview gave you a hint of how SDR works. You will see more SDR products coming your way. Special thanks to Charles G4GUO for helping to clear up some of my SDR concept uncertainties.

Interesting SDR Links

- Apple iTunes link for iSDR App
  http://itunes.apple.com/us/app/isdr/id480077371?mt=8
- Digital Confections internet forum for the iSDR App
  www.digitalconfections.com/index.php?option=com_kunena&Itemid=61
- SDR Tutorials – Youngblood series in 2002 QEX magazine
  www.Flex-Radio.com/data/doc/qex1.pdf
- SDR Tutorials – The Garage Shoppe “Fists of Fourier” series
  http://garage-shoppe.com/wordpress/?p=488
- KB9YIG vendor site for SoftRock SDR radios
  www.KB9YIG.com
- Lazy Dog vendor site of LD-1A SDR radios
  http://garage-shoppe.com/wordpress/?page_id=40
- TAPR-sponsored HPSDR (High Performance SDR) Project
  http://openHPSDR.org/

OCARC
GENERAL MEETING MINUTES
2012-02-17

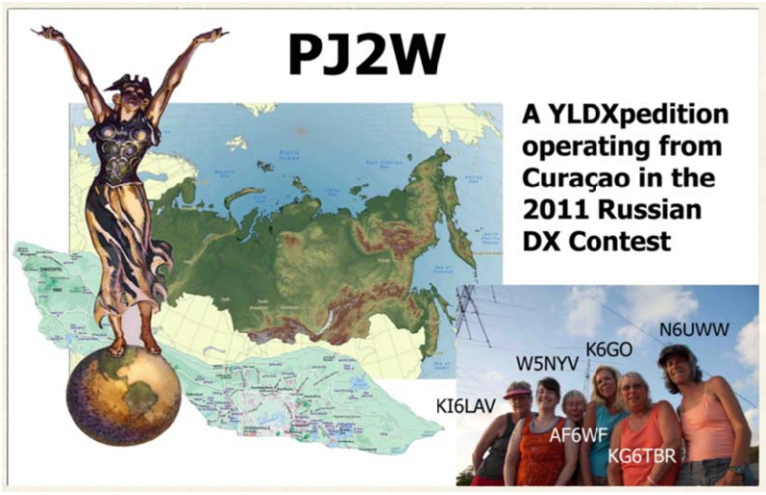
The OCARC February General Meeting was held at the Red Cross complex in Santa Ana on Friday evening, February 17th, 2012. There were a total of 38 members and visitors present. Eight club officers were present for a quorum….only Nicholas AF6CF and John W6JOR were absent.

The club Program Chairman, Vice President Carl Flint, N8AE, introduced our speaker for the evening, Margie Hoffman KG6TBR, who spoke on "YL DXpedition to Curaçao, PJ2-land".

Margie KG6TBR talks about the Five YL Operators who participated in the DXpedition to Curaçao

Margie KG6TBR showed this view of a nearby Lagoon (…that looks like a little bit of paradise!)

The best part of their DXpedition was there was no set-up!! They rented a home in Curaçao that had four-operating stations already set up. In addition, there were dozens of antennas to choose from, like



One of the QSL Cards sent out from the YL DXpedition

5-ele on 20M and 5-ele on15M, etc. In total for the 3 day operation, they worked 5,400 QSOs and had a blast.

NEW BUSINESS

General Study Class - Carl N8AE offered to form up a class to help hams move up to a general glass license.

OLD BUSINESS

Field Day – Carl N8AE, Field Day co-Chairman, reported that the Knott school grounds will most likely be approved for Field Day. Carl is liking for people to act as "Team Captains". About tem members that were present said they were planning to participate in FD. Carl is still looking for one OCARC member to be his co-chair and help him organize FD as done the OCARC way.

APRIL Meeting Date - The normal April meeting date (3rd Friday) is conflicted with two significant ham events: the Visalia DX Convention and the Baker-To-Vegas (B2V) Running Event and has moved to one week early, April 13.

Need Storage Home for Club Generator Trailer – Ken reminded members that the club is looking for a new storage home for the club's generator trailer. See February RF Newsletter for details.

Respectfully submitted by:
Ken Konechy W6HHC, Secretary

Upcoming Special Event Stations (Source: www.arrl.org)

03/14/2012 | International Pi Day / Einstein's Birthday

Mar 14, 0000Z-2359Z, KD8DKU, Marquette, MI. Lake Effect Amateur Radio Club. PSK31 14.070 SSB 7.285. QSL. Lake Effect ARC/Pi, 36 Southfork St, Marquette, MI 49855. A fun event for the nerd in all of us. Lemon pi(e) at club HQ for drop-ins! Will sked QSOs. www.lakeeffectarc.info/Event-PiEinsteinDay/PiDay.htm

03/28/2012 | Mule Days

Mar 28-Apr 1, 1600Z-2300Z, W4GGM, Columbia, TN. Maury Amateur Radio Club. 14.260 14.070 7.260 7.060. QSL. Andreas Eastep, KJ4JEK, 504 Hemingway Dr, Columbia, TN 38401. Mule Day is a annual celebration of all things related to mules and is held in Columbia TN, the "mule capital" of the world. It began in 1840 as "Breeder's Day", a meeting for mule breeders. It now attracts over 200,000 people and takes place over four days. Mule Day was featured on the program "Only In America" with Larry the Cable Guy. www.w4ggm.org

03/30/2012 | Civil War Battle of Shiloh, TN 150th Anniversary

Mar 30-Apr 1, 1200Z-2000Z, NA5MS, New Albany, MS. Northeast Mississippi Amateur Radio Club. 3.860. Certificate. Charles Buster, 305 N Broad St, New Albany, MS 38652. Operating from the Shiloh Battlefield during a weekend reenactment of the battle. Operating in the lower parts of the General phone bands and 10m Technician band. Certificate is a special limited edition unfolded lithographed print for $4 postage included. FULL COLOR QSL available for $1 postage included. Mailing should be received within 30 days of event.

04/01/2012 | Titanic Sinking Centenary

Apr 1-Apr 30, 0000Z-2359Z, GI100MGY, Belfast, GREAT BRITAIN. Project Whitestar. 14.010. QSL. Via bureau or direct to: Charlie Morrison, GI4FUE, 60 Windslow Dri, Carrickfergus BT38 9BB, GREAT BRITAIN. groups.yahoo.com/group/projectwhitestar2012

04/07/2012 | 150th Anniversary of the Great Locomotive Chase -- The "General"

Apr 7, 1400Z-1800Z, W4ABZ, Ringgold, GA. Ringgold Amateur Radio Club. 14.265 7.265. Certificate. Jim Skeen, 224 Smith Liner Rd, Chickamauga, GA 30707.

04/13/2012 | Titanic Sinking Commemoration

Apr 13-Apr 16, 1400Z-2000Z, W4AVM, Tampa, FL. SS American Victory Amateur Radio Club. 14.225 14.040. Certificate & QSL. Morris Bernstein, W4REX, 6507 La Mesa Cir, Tampa, FL 33634. More information on American Victory website detailing special transmissions at time of Titanic's collision with iceberg and sinking. Special transmissions by ship station KKUI on 500 kc and commemorative bulletin on 468 kc during hours of 0200Z and 0500Z. americanvictory.org

2012 ARRL CONTEST SCHEDULE

APRIL

Rookie Roundup: Third Sunday, 1800 UTC through 2359 UTC.

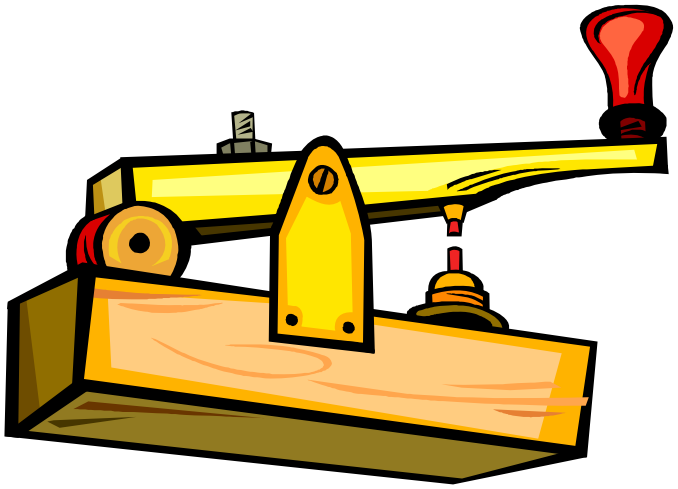
JUNE

June VHF QSO Party: Second full weekend in June, 1800 UTC Saturday through 0259 UTC Monday.

Field Day: Fourth full weekend in June, 1800 UTC Saturday through 2059 UTC Sunday.

JULY

IARU HF World Championships: The second full weekend of July, 1200 UTC Saturday through 1159 UTC Sunday



March Puzzler:

You wander into the back pool room of your local watering hole, and notice a crowd around a man standing behind the small card table. He invites you to step up. As you do, you notice three identical walnut shells on the table along with a pea.

Oh, the old shell game you think. The man silently places one of the shells over the pea, and then he begins moving the shells around extremely fast on the table. You know you can't follow his action due to his tremendous skill with the shells. He finally stops and places the shells in a row. Pick the one with the pea he requests; since you haven't put any money on the table you point to a shell.

Instead of turning over that shell, he then turns over one of the shells you hadn't picked showing it doesn't contain the pea, and bets you even money that the pea is not under shell you chose. When you hesitate, he even offers to let you change your choice and pick the other still covered shell.

What should you do?

a) Walk away.
b) Stick with the shell you chose.
c) Change your selection to the other shell.
d) It doesn't matter whether you change or not, the odds are the same.

What are the odds of winning if you walk away?

a) 0 in 6
b) 1 in 6
c) 1 in 3
d) 1 in 2
e) 2 in 3
f) 5 in 6
g) 1 in 1

What are the odds of winning if you stick with your choice?

a) 0 in 6
b) 1 in 6
c) 1 in 3
d) 1 in 2
e) 2 in 3
f) 5 in 6
g) 1 in 1

What are the odds of winning if you change your choice?

a) 0 in 6
b) 1 in 6
c) 1 in 3
d) 1 in 2
e) 2 in 3
f) 5 in 6
g) 1 in 1

Answer to February's Puzzler:

The engineers realized that if the life of the flat belt is governed by its surface area, then doubling the area would double the life of the belt. Unfortunately they couldn't make the belt wider so they put a half twist in the belt so that every time a section of the belt goes around one the pulleys the alternate side contacts the pulley surface. The belt thus formed is called a Mobius loop; it is a three dimensional object that has only one surface and one edge.

Again the number of responses were weak. We received three correct answers and no wrong answers. Take a try at this month's puzzler; it may be the last.

Our winners are:
1) KC6DLA - Bruce
2) W6HHC - Ken
3) K6VDP - Larry

Club Member Photo Montage!

Hey OCARC Members, I would like to put together a photo montage of us ham's operating our stations. Please send me a picture of you at your station, humble or extravagent, neat or a disaster. Lets see ourselves enjoying our hobbie. Send your photos to me at: w6fkx@w6ze.org or w6fkx@arrl.net.

Thanks, I look forward to seeing you in action

Doug Britton W6FKX, OCARC Activities Director

Heathkit of the Month: #38
by Bob Eckweiler, AF6C

Heathkit

Heathkit CS-1
Condenser Substitution Box

Introduction:
In November of last year (#35) the Heathkit RS-1 Resistor Substitution Box was discussed. It is a handy piece of test equipment that allows you to temporarily replace a resistor during troubleshooting.

Heathkit made capacitor substitution boxes as well as resistor substitution boxes. One of the boxes is the CS-1 which was passed along to me by the late WA6PFA - Tom last year along with the RS-1. It has already paid me dividends troubleshooting an old (1947 era) National NC-173 receiver.

Prior to the mid-sixties "capacitors" were known as "condensers". The name change occurred because engineers and scientists decided that "capacitor" was more descriptive;

Capacitor Substitution Boxes

Model:	From:	To:
CS-1	1954	1962
IN-22	1962	1967
EUW-29*	1964	1972
IN-47	1967	1978
EU-29A*	1972	?
IN-3147	1977	1982

Decade Capacitance Boxes

Model:	From:	To:
DC-1	1952	1961
IN-21	1961	1976
IN-27	1977	1980
IN-3127	1980	?

* Part of the factory wired Malmstadt-Enke Instrumentation Lab by Heath.

Table 1: Heathkit Capacitance Boxes & Approximate Production Years

Figure 1: Heathkit CS-1 Condenser Substitution Box set for 0.01 *µF*

"condenser" more accurately describing a thermodynamic device. Many older radios used paper dielectric capacitors (or a similar construction) in non-critical parts of circuits for capacitances from 0.001 µF up to 0.5 µF and beyond. These capacitors can be recognized as they are often sealed with wax and the wax tends to become soft and bubble or drip with heat and age. (Figure 3). Capacitors can fail open or shorted, develop series resistance, develop leakage or change value. Shorted capacitors are usually easy to diagnose, but excessive leakage, which is common with older capaci-

100 pF [1]	(0.00010 µF)	0.010 µF	
220 pF [1]	(0.00022 µF)	0.015 µF	
470 pF [1]	(0.00047 µF)	0.022 µF	
1,000 pF	(0.00100 µF)	0.033 µF	
1,500 pF	(0.00150 µF)	0.047 µF	
2,200 pF	(0.00220 µF)	0.068 µF	
3,300 pF	(0.00330 µF)	0.100 µF	
4,700 pF	(0.00470 µF)	0.150 µF [2]	
6,800 pF	(0.00680 µF)	0.220 µF [2]	

Capacitors rated: 600 VDC 10% except:
[1] 500 VDC 5% [2] 400 VDC 10%

Table 2: Capacitor Values for the CS-1, IN-22, IN-47, IN-3147 EUW-29 & EU-9A Capacitor Substitution Boxes

tors, as well as the other failure modes are harder to diagnose. Thus a substitution box for capacitors is very handy for troubleshooting.

The Heathkit CS-1 Condenser Substitution Box: The Heathkit CS-1 (shown in figure 1) is one of numerous devices that allows selection of a capacitance for testing or lab experimenting. Table 1 lists Heathkit capacitor substitution boxes and decade capacitance boxes.

The six capacitance substitution box kits made by Heathkit, including the EU series, are all electrically identical to the CS-1. The CS-1 contains eighteen 400, 500 or 600 volt 5% or 10% tolerance capacitors, an 18-position rotary switch and two binding posts. The eighteen capacitors cover 100 pF to 0.22 µF. Table 2 shows the actual values, voltages and tolerances. The three lowest value capacitors are silver mica, and the remaining are axial tubular molded plastic types. Figure 2 shows the CS-1 insides.

The binding posts on the CS-1 are red and black indicating polarization. While the capacitors are not really polarized, many tubular capacitors need to be installed in the circuit in the proper direction for best performance. This is due to the construction of those tubular capacitors; they are assembled such that one side of

Figure 2: Heathkit CS-1 Condenser Substitution Box Interior

the capacitor is is electrically connected to the foil just under the outside insulation of the capacitor. This lead is often marked on the capacitor by a black line signifying the "outside foil". The outside of the capacitor is more susceptible to noise pickup and should be the side connected to ground (regardless of polarity) when one side of the capacitor is grounded. If neither side is grounded the "outer foil" lead should be connected to the lower impedance side of the circuit. For instance when the capacitor couples the plate of one stage to the grid of the next the this lead should go to the lower impedance plate circuit. The black binding post signifies the "outside foil" lead.

The CS-1 mounts in a black bakelite box that measures 6" L x 3" W x 2" H. All the compo-

nents mount on the aluminum face plate. Two paint schemes were used during the manufacture of the CS-1. The early model is finished in a light beige with red lettering, similar to other early Heathkit test equipment. The later model is shown in Figure 1; it is finished in dark grey with white lettering, similar to the style of the 60's line of test equipment.

The CS-1 Capacitance Substitution Box sold for $5.50 in 1956. This kit and its resistor companion, the RS-1 were basic kits and were usually only listed in the "Full" line Heathkit catalogs.

Using the Heathkit CS-1:

The most effective way to use the CS-1 is to unsolder or clip one lead of the capacitor you want to test and then clip in the substitution box in its place and select the desired capacitance. Recently I had an old (circa 1947) receiver that had audio problems. The coupling capacitor between the first and second audio stage was clipped and the replaced by the CS-1 set to the same capacitance. The audio immediately improved, but was still distorted. The capacitor was removed and tested (on a Heathkit IT-11 - Heathkit of the Month #2). It had very high leakage which was upsetting the bias on the last audio stage. The grid coupling capacitor for the first audio was subsequently tested with the same result, cleaning up the audio problem. The two capacitors tested so badly that all the paper capacitors in the radio were replaced. Subsequent testing revealed that only two of the twenty-five paper capacitors passed the leakage test and both of those showed a high series resistance.

Figure 3 shows two old capacitors from the NC-173 receiver and their modern replacements - all manufactured by Cornell Dubilier. The top two are older 0.01 µF and 0.05 µF 600 VDC MD series paper and wax capacitors. The bottom two capacitors 0.01 µF and 0.047 µF at 630 VDC Type 150 metallized polyester. The new capacitors take up about 1/4 the chassis area and 1/8 the volume.

Figure 3: Old and new style tubular capacitors (see text).

The Heathkit Decade Capacitor Boxes:

For laboratory use or more critical capacitor substitution, Heathkit made four models of decade capacitor boxes, all electrically similar. They cover 100 µµF (pF) to 0.111 µF in 100 µµF (pF) steps. The box has three ten-position rotary switches. The first switch selects 0 to 1,000 pF in 100 pF steps. The middle switch selects 0 to 0.01 µF in 0.001 µF (1,000 pF) steps, and the last switch selects 0 to 0.1 µF in 0.01 µF (10,000 pF) steps. The three circuits are in parallel so their values sum. Each switch uses four capacitors in a 1, 2, 3, 4 sequence that are selected by their switch to create the full decade. The capacitor tolerances and types used by Heathkit vary by model. Figure 4 shows the IN-3127. Figure 5 shows its schematic which is typical of all four models.

Summary:
This month a handy but simple piece of test equipment was covered along with its Heathkit derivatives. It is one of those pieces of test equipment that is infrequently used but very useful when needed.

It's time to look in the closet and ham shack and see what will be discussed next month. If you have a suggestion for a kit to be discussed feel free to email me. Uh oh, next month is April!

73, from AF6C

Figure 4: Heathkit Decade Capacitor Box Model IN-3127

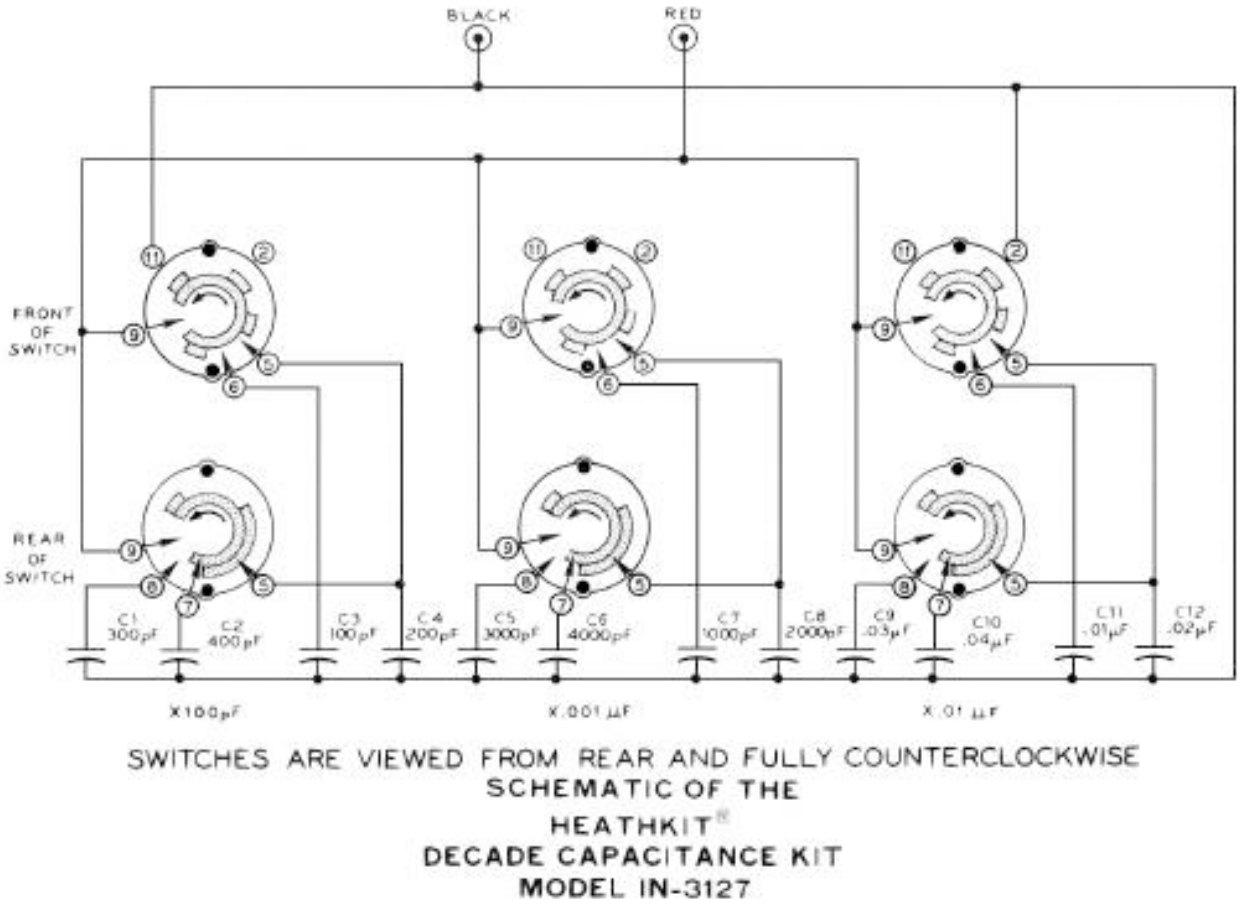


Figure 5: C1 – C4 are 500V 1% mica capacitors, C5 – C8 are 630V 1% polystyrene capacitors, C9 – C12 are 400V 5% mylar capacitors

OCARC
BOARD MEETING MINUTES
2012-02-11

The OCARC Board meeting was held at the JägerHaus Restaurant, 2525 East Ball Road, Anaheim, and called to order by President Paul Gussow W6GMU on Saturday, February 11, 2012. All directors were present except Carl N8AE, Doug W6FKX, and Jeff W6UX. There were a total of twelve members and visitors present.

DIRECTOR REPORTS:

- **VP** – No report
- **Treas** – Bob AF6C determined the correct amount for outstanding checks at the end of 2011 was $298.30. The corrected list for assets/liabilities to be used for the beginning of 2012 is:

Assets – For Ending Balance 2011-12-31	
Checking Account Statement:	$4,165.36
Less Outstanding Checks:	-$298.30
Checking Account Balance:	$3,867.06
Savings Account Statement:	$2,300.04
Total Ending Net Balance:	**$6,167.10**
On deposit with Jagerhaus:	$200.00
Net Balance Including Deposit:	**$6,367.10**

- **Sec** – Ken W6HHC reported that the club had received a letter from The O.C. Boy Scouts Council offering a table top for the March 3rd Scout University for ScoutMasters Training. [after the board meeting, Tim K6GEP offered to make it happen.]
- **Tech** – Concerning a recent enquiry asking for help on reprogramming surplus Motorola Secure radios, John W6JOR recommended to not get involved with encrypted radio repairs.

OLD BIZ:

- **Newsletter Editors**
  - Mar – Doug W6FKX
  - April – Ken W6HHC
  - May – Paul W6GMU
- **FIELD DAY** – Paul W6GMU and Ken W6HHC reported that George N6VNI had started the process to schedule the Knott education site for OCARC FD. Tim K6GEP explained that he could not act as FD co-chair because of conflicts. There is a desire to plan for a "really big" FD in 2013 – the 80th Anniversary of OCARC!
- **Soldering Classes** – Bob AF6C that the soldering classes meeting needs to be pushed into March.
- **W6ZE LOTW Account –** Bob AF6C reported that Jeff W6UX and Carl N8AE would help him set up an account for W6ZE on Logbooks Of The World.
- **Home for OCARC Generator Trailer** – Ken W6HHC renewed his pleas to find a new home for the trailer used by club's old generator.

NEW BIZ

- **OCCARO** – Our prez, Paul W6GMU, reported that he will be the club rep to the Orange County Council of Amateur Radio Organizations (OCCARO). He reported that plans for the yearly OC Fair Ham Booth are somewhat up in the air because of location concerns. Another OCCARO meeting is planned for March to resolve the issues.

GOOD of the CLUB

- **New Member** – Randy Welch K6ARW (son of Hank W6HTW) joined the OCARC at the breakfast.
- **Homebrew DTV antenna** – John W6JOR brought in a cardboard prototype antenna for receiving commercial Digital TV stations. Ask John were to find the plans for this "horn-type" antenna.

Respectfully submitted by:
Ken Konechy W6HHC, Secretary

Ten Commandments of Electrical Safety

(1) Beware of the lightning that lurks in an undischarged capacitor lest it cause thee to be bounced upon thy backside in a most ungainly manner.

(2) Cause thou the switch that supplies large quantities of juice to be opened and thusly tagged, so thy days may be long on this earthly vale of tears.

(3) Prove to thyself that all circuits that radiateth and upon which thou worketh are grounded lest they lift thee to high-frequency potential and cause thee to radiate also.

(4) Take care thou useth the proper method when thou taketh the measure of high-voltage circuits so that thou doth not incinerate both thee and the meter, for verily though thou hast no account number and can be easily replaced, the meter doth have one and as a consequence bringeth much woe upon the supply department.

(5)Tarry thee not amongst those who engage in intentional shocks for they are surely non-believers and are not long for this world.

(6) Take care thou tampereth not with interlocks and safety devices, for this incureth the wrath of thy seniors and bringeth the fury of the safety officer down upon thy head and shoulders.

(7) Work thee not on energized equipment, for if thou doeth, thy mates will surely be buying lunch without thee and thy space at the table will be filled by another.

(8) Verily, verily I say unto thee, never service high-voltage equipment alone, for electric cooking is a slothful process, and thou might sizzle in thy own fat for hours on end before thy Maker sees fit to end thy misery and drag thee into His fold.

(9) Trifle thee not with radioactive tubes and substances lest thou commence to glow in the dark like a lightning bug.

(10) Commit thee to memory the works of the prophets, which are written in the instruction books, which giveth the straight info and which consoleth thee, and thou cannot make mistakes.

-From *Orbit*, the Journal of the Rutherford High Energy Laboratory, Didcot, England

(31 January 1965) p.12

OCARC BALANCES FOR FEBRUARY 2012

For MONTH
February

As of the end of February the Checking Balance is:	$4,015.51
As of the end of February the Savings Balance is:	$2,300.41
TOTAL BALANCE:	$6,315.92
Net Checking Account gain or (loss) in February is:	$293.81
Net Savings Account gain or (loss) in February is:	$0.18

CHECKING ACCT:

Month:	Starting Bal. Checking	Checks Outstanding	Starting Bal. Statement	Deposits	Checks Written	Ending Bal. Checking	Checks Outstanding	Ending Bal. Statement	Monthly Change	
Jan	$3,867.06	$298.30	$4,165.36	$320.00	$465.36	$3,721.70	$28.36	$3,750.06	($145.36)	√
Feb	$3,721.70	$28.36	$3,750.06	$505.00	$211.19	$4,015.51	$10.76	$4,026.27	$293.81	√
Mar	$4,015.51									
Apr										
May										
Jun										
Jul										
Aug										
Sep										
Oct										
Nov										
Dec										
Totals:				$825.00	$676.55				$148.45	

SAVINGS ACCT:

Month:	Beg. Bal.	From Checking	To Checking	Interest	End Bal.	Monthly Change
Jan	$2,300.04	$0.00	$0.00	$0.19	$2,300.23	$0.19
Feb	$2,300.23			$0.18	$2,300.41	$0.18
Mar	$2,300.41					
Apr						
May						
Jun						
Jul						
Aug						
Sep						
Oct						
Nov						
Dec						
Totals:		$0.00	$0.00	$0.37	$2,300.41	$0.37
	Net Savings to Checking:		$0.00			