



# RF



## ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. LIII NO. 12

P.O. BOX 3454, TUSTIN, CA 92781-3454

December 2012

### The Prez Sez.....

by Paul W6GMU



As 2012 draws to a close, I'd like to thank the Club membership for permitting me to serve as your Club President these past two years. It has not only been an honor and a privilege to do so, it's also been fun!

Together we enjoyed Field Day, a sane, smooth and lucrative Auction and great general meetings.

The Annual Election netted us an outstanding crop of new officers. Those that served on the 2012 Board were a top-notch crew who served admirably and have my heartfelt thanks!

Last week we had a wonderful Holiday party, again held at the JägerHaus, during which I believe all attendees had a fine time. And then, directly thereafter, the torch was passed to the newly elected 2013 Board members.

Next year our Field Day operation will be one of the highest order, in celebration of our 80<sup>th</sup> year as The Orange County Amateur Radio Club! It will be orchestrated by members of the SOCAL Field Day Royalty and operated by as many Club members as possible, plus components of other Clubs and Boy Scout troops. Wow!

I wish you all Happy Holidays and the very best for 2013!

**73 DE Paul W6GMU**  
**The "Prez"**

### Board Meeting

Saturday January 12th

### GENERAL MEETING "80<sup>th</sup> Year!"

The program for the January General Meeting is still being prepared by the Board at the present time, and will include a discussion about the upcoming 80<sup>th</sup> anniversary celebrations and Field Day preparations.

The next general meeting will be on:

**Friday, January 18th**  
**@ 7:00 PM**

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

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## 2012 Board of Directors:

### President:

Paul Gussow, W6GMU  
(714) 624-1717  
[W6GMU@w6ze.org](mailto:W6GMU@w6ze.org)

### Vice President:

Robbie Robinson, KB6CJZ  
(714) 978-8049  
[KB6CJZ@w6ze.org](mailto:KB6CJZ@w6ze.org)

### Secretary:

Ken Konechy, W6HHC  
(714) 744-0217  
[W6HHC@w6ze.org](mailto:W6HHC@w6ze.org)

### Treasurer:

Bob Eckweiler, AF6C  
(714) 639-5074  
[af6c@w6ze.org](mailto:af6c@w6ze.org)

### Membership:

Jeff Hall, W6UX  
(949) 697-9279  
[W6UX@w6ze.org](mailto:W6UX@w6ze.org)

### Activities:

Doug Britton, W6FKX  
(714) 742-2459  
[w6fkx@w6ze.org](mailto:w6fkx@w6ze.org)

### Publicity:

Tim Goepfinger, N6GP  
(714) 730-0395  
[n6gp@w6ze.org](mailto:n6gp@w6ze.org)

### Technical:

John Roberts Jr, W6JOR  
(714) 540-9148  
[w6jor@w6ze.org](mailto:w6jor@w6ze.org)

## Directors-At-Large:

Kristin Dankert, K6PEQ  
(714) 544-9846  
[k6peq@w6ze.org](mailto:k6peq@w6ze.org)

Nicholas Haban, AF6CF  
(714) 693-9778  
[af6cf@w6ze.org](mailto:af6cf@w6ze.org)

## 2012 Club Appointments:

### W6ZE Club License Trustee:

Bob Eckweiler, AF6C  
(714) 639-5074  
[AF6C@w6ze.org](mailto:AF6C@w6ze.org)

### Club Historian:

Bob Evans, WB6IXN  
(714) 543-9111  
[WB6IXN@w6ze.org](mailto:WB6IXN@w6ze.org)

### RF Editor (rotating):

Nicholas Haban, AF6CF  
(714) 693-9778  
[AF6CF@w6ze.org](mailto:AF6CF@w6ze.org)

### WEB Master:

Ken Konechy, W6HHC  
(714) 744-0217  
[W6HHC@w6ze.org](mailto:W6HHC@w6ze.org)

### Assistant WEB Master:

Bob Eckweiler, AF6C  
(714) 639-5074  
[AF6C@w6ze.org](mailto:AF6C@w6ze.org)

### ARRL Awards Appointee:

Arnie Shatz, N6HC  
(714) 573-2965  
[N6HC@aol.com](mailto:N6HC@aol.com)

John Schroeder, N6QQ  
(West Orange Co.)  
(562) 404-1112  
[N6QQ@msn.com](mailto:N6QQ@msn.com)

### OCCARO Delegate:

Paul Gussow, W6GMU  
(714) 624-1717  
[W6GMU@W6ZE.org](mailto:W6GMU@W6ZE.org)

## Monthly Events:

### General Meeting:

Third Friday of the month  
at 7:00 PM  
American Red Cross  
600 Parkcenter Drive  
(Near Tustin Ave. & 4<sup>th</sup> 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.

## OCARC Christmas Dinner - Great Event

Photos by Carl N8AE and Ken W6HHC

A total of 48 members and friends attended the OCARC Christmas Dinner held on Friday Dec 07 at the Jaegerhaus Restaurant in Anaheim. Beverly KI6APH was the winner of the Radio Grand Prize this year. A special thanks this year to Doug W6FKX who organized the radio prizes, Beverly KI6APH who prepared the baskets for Women, and Paul W6GMU who firmed up the reservations and food menu for the Dinner. The Kei Yamachika W6NGO Trust Fund donated \$186 to cover OCARC costs on the dinner ticket expenses.



The OCARC Dinner is a great place to chat. Here are long time club members (L-R) Ken W6HHC, Fried WA6WZO, and XYL Sandi WA6WZN



President Paul W6GMU presents the OCARC 2012 "Kei Yamachika Good-of-the-Club Award" to Ken W6HHC



The "Good of the Club Award" is presented annually to the OCARC club member who has made the most significant contribution to the club for the year. In 1997, this annual award was then dedicated to the memory of Kei Yamachika - W6NGO, for his year-after-year contributions in support of our club's activities.



VP Robbie KB6CJZ (R) represents out-going Prez, Paul W6GMU, with a plaque for a job well done!



Out-going Prez Paul W6GMU (L) present the new Prez for 2013, Nicholas AF6CF, with the President's Gavel



Beverly KI6APH prepared baskets as prizes to ten lucky ladies who attended the OCARC dinner affair.



Cathy K6VC, XYL of the Orange SM Carl WU6D, was an early winner of one of the baskets. Beverly KI6APH (R) is assisting.



Valery Weed (C) brings her basket to the table. Her hubby Tom K6CCD (L) and Carl WU6D (R) look on.



Another basket winner is Sharon K6IRD (L) here chatting with Beverly KI6APH



Doug W6FKX, our Activities Chair, obtained a table full of Radio Prizes for the dinner drawing.



The Grand Prize for the Radio drawing this year was a neat set of Heil products for the ham station.



The winner of the Grand Prize was Beverly KI6APH

## OCARC BOARD MEETING MINUTES 2012-11-11

The OCARC Board meeting was held at the JägerHaus Restaurant, 2525 East Ball Road, Anaheim, on November 11<sup>th</sup> at 8:15 AM. There were a total of 10 members and visitors present. OCARC had a quorum with all officers present, except Kristin K6PEQ.

### DIRECTOR REPORTS:

- **Treasurer** – Bob AF6C reported that the club had \$6,101 in its banking accounts.
- **Membership** – Jeff W6UX reported that the club currently had 85 paid members.
- **Technical** – John W6JOR reported that WA6QWJ in Santa Ana finally had permission to keep his tower up...now painted sky blue.

### OLD BIZ:

#### • Newsletter Editors

- Dec – Nicholas AF6CF
- Jan – Bob AF6C
- Feb – Kristin K6PEQ
- Mar – Doug W6FKX

- **OCARC Auction** –Bob AF6C reported that the club made a net profit of \$668 from the radio auction held in October. Special thanks to Chip K7JA, the auctioneer for a job well done!!
- **Nomination Committee** –Nicholas AF6CF reported that only two members of the current board indicated that they would not be able to serve in 2013. A telephone survey is planned to discuss positions and nominate more club members. The election of nominated members for 2013 would be held at the OCARC November meeting.
- **Field Day 2013** – Paul W6GMU reported that George N6VNI had secured exclusive use of the Walter Knott Education site for OCARC FD in 2013.
- **OCARC Mugs and Shirts** – Paul W6GMU reported that he had confirmed a supplier for coffee mugs with OCARC logos for \$10. Call letters can be added for \$2 more. Ken reported that club shirts with logos had

been purchased at I-Initial in Tustin. No current prices for shirts were available yet. No action was taken on mugs or shirts, yet.

### NEW BIZ:

#### • December Christmas Dinner

- President Paul W6GMU reported that Beverly KI6APH had agreed to prepare tenladies' baskets for the Christmas Dinner.
  - The Board approved a motion for OCARC to provide \$500 to purchase radio prizes at the dinner opportunity drawing....and to provide \$100 to Beverly KI6APH to create the baskets for ladies.
  - Tim N6GP discussed members making donations to the radio prizes fund and offered to make a \$100 personal donation. Nicholas AF6CF offered to match Tim N6GP's donation. Tim and Nicholas agreed to talk up an appeal for making donations at the November General Meeting.
- **Club Reunion in 2013** – The Board agreed that the last Club Reunion held in 2008 for the 75<sup>th</sup> Anniversary of the club founding was GREAT FUN. The board proposed that one of the first actions of the new board in 2013 should be to organize another Club Reunion to celebrate the 80th Anniversary of the club founding in 2013. The reunion would probably be scheduled for the September General Meeting.

### GOOD OF CLUB:

- **Discussion on EMCOMM** – Ken W6HHC reported that he had been following an interesting and thought-provoking discussion about "ham radio and Emergency Communications". The discussion started out with one ham pointing to a nice article about how valuable ham radio is for EmComm in disaster situations. Another ham pointed out that while this is true, hams should be careful to not "paint a picture" where EmComm is seen as the number one and only reason for the existence of ham radio privileges. The discussion went on to say it would be easy to imagine the FCC changing the amateur radio regulations to evolve to a "EmComm only" flavor. Ham Radio is much more than just EmComm...it offers experimentation, technical training, contesting, improving inter-national understanding, and so many other aspects to license holders in addition to EmComm.

Respectfully submitted by:  
Ken Konechy W6HHC, Secretary

Heathkit of the Month:  
by Bob Eckweiler, AF6C

# Heathkit

## Heathkit CT-1 In Circuit Capaci-Tester

### Introduction:

When troubleshooting equipment, capacitors can be difficult to check while in the circuit. Removing one lead of a component just to do a measurement can be time consuming. Thus a piece of test equipment that can check capacitors without having to first disconnect them can expedite servicing tremendously.

### The Heathkit CT-1:

In 1957 Heathkit came out with the CT-1 in-circuit capacitor checker to which they gave the moniker "Capaci-Tester". The CT-1 originally sold for \$7.95.

The CT-1 checks a capacitor for an open, shorted or intermittent condition. Capacitors above 50  $\mu\text{fd}$  (picofarads) can be checked for an open condition when shunted by a low in-circuit resistance (greater than  $30\Omega$  above 350  $\mu\text{fd}$ ,  $400\Omega$  between 100 and 350  $\mu\text{fd}$  and  $2,000\Omega$  between 50 and 100  $\mu\text{fd}$ ). Capacitors up to 20 $\mu\text{fd}$  can be checked for shorts when shunted by at least  $10\Omega$ . The tester is not recommended for checking electrolytic capacitors.

### Operation:

The Capaci-Tester is easy to use. It is important that the device under test be turned off AND unplugged from any power source. The CT-1 comes with a pair of test leads, one red and one black, each with a banana plug on one end and an alligator clip on the other. The test leads are clipped across the capacitor to be tested, noting that the black test lead is grounded within the CT-1.

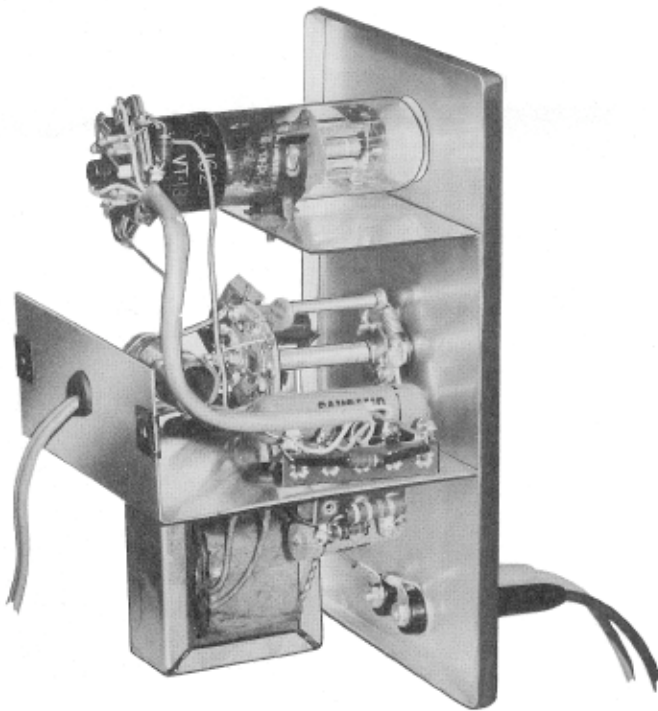
The CT-1 has only one control, a five-position rotary switch. In the center position the CT-1 is powered off. The two positions right of center



Figure 1: The Heathkit CT-1

are for testing for a shorted condition, and the two positions left of center are for testing for an open condition. Immediately on either side of the center position is a position marked **CHECK**. In these positions the CT-1 is powered on and the eye-tube indicator confirms the selected test's circuitry is working; also on the short check side any residual voltage on the capacitor under test is discharged. The far left and far right switch positions are marked **TEST** and perform the actual test. These two switch positions are momentary only, with the switch spring-loaded to move back into its nearest check position when released.

The indicator is a "magic-eye" tube that has a phosphorescent green circular indicator. A



**Figure 2: Inside the Heathkit CT-1**

shadow wedge is shown on the indicator which can vary from about 90° to just a small line, and provides the indication.

For either test, if the eye-tube closes then the capacitor is okay. However if the eye-tube remains open or only partially closes then the capacitor needs to be replaced (or at least checked further). If the indicator fluctuates, it is an indication that the capacitor is intermittent.

#### **CT-1 Circuit Description:**

The CT-1 is a clever design. It uses one tube, the war-surplus 1629 eye-tube that was used in the ARC-5 transmitter. This tube acts as multiple rectifiers, an oscillator when testing for an open condition, an amplifier when testing for a short condition, and as an indicator for both test conditions. Figure 3 shows the schematic.

The power supply consists of only a transformer with three windings. The first provides 12 VAC filament voltage for the 1629 tube. The second winding provides 540 VAC to the plates of the tube which is self rectifying. The third winding is 55 VAC used to bias the tube.

#### **Short Test:**

When the switch is moved to the **SHORT TEST** position 60 cycle AC from the bias winding is applied through a voltage divider to the grid of the tube as well as to across the test leads. The AC voltage from the third winding is rectified by the grid and bias is created causing the eye tube to close. The test leads place the bias across the capacitor and the eye-tube remains closed as long as the capacitor shows an impedance greater than about 10Ω at 60 cps. Open capacitors will test good in the short test for an obvious reason. In the **CHECK TEST** position the switch also shorts the test leads opening the eye-tube and simulating a shorted capacitor. The phase of the bias and plate voltages must be proper for this circuit to work.

#### **The Open Test:**

When the switch is moved to the **OPEN TEST** position the 1629 tube is connected as a Hartley oscillator operating at a nominal frequency of 19 mc. (MHz). The tapped Hartley oscillator coil also has a closely coupled secondary winding shunted by the 10 μfd capacitor. When the oscillator is active, bias is created across the 2.2 MΩ grid resistor causing the eye to close. However, the closely coupled LC circuit will normally absorb energy from the coil and stop any oscillation causing the tube-eye to open. In the **OPEN TEST** position the test leads are coupled to the secondary coil. If an open capacitor is connected across the test leads and thus the coil nothing will happen; however if there is enough capacitance across the test leads the secondary winding becomes untuned and the oscillator goes into oscillation closing the eye-tube indicator. A shorted capacitor will also indicate a not open condition, again for obvious reasons.

#### **The Heathkit IT-22:**

In 1963 the CT-1 was updated to the IT-22 which is electrically identical, but sports a new paint scheme that matches Heathkit's mid '60s test equipment styling - medium-gray and silver with red accenting. The later IT-22 sold for \$10.95 in 1965 (See: Figure 4).

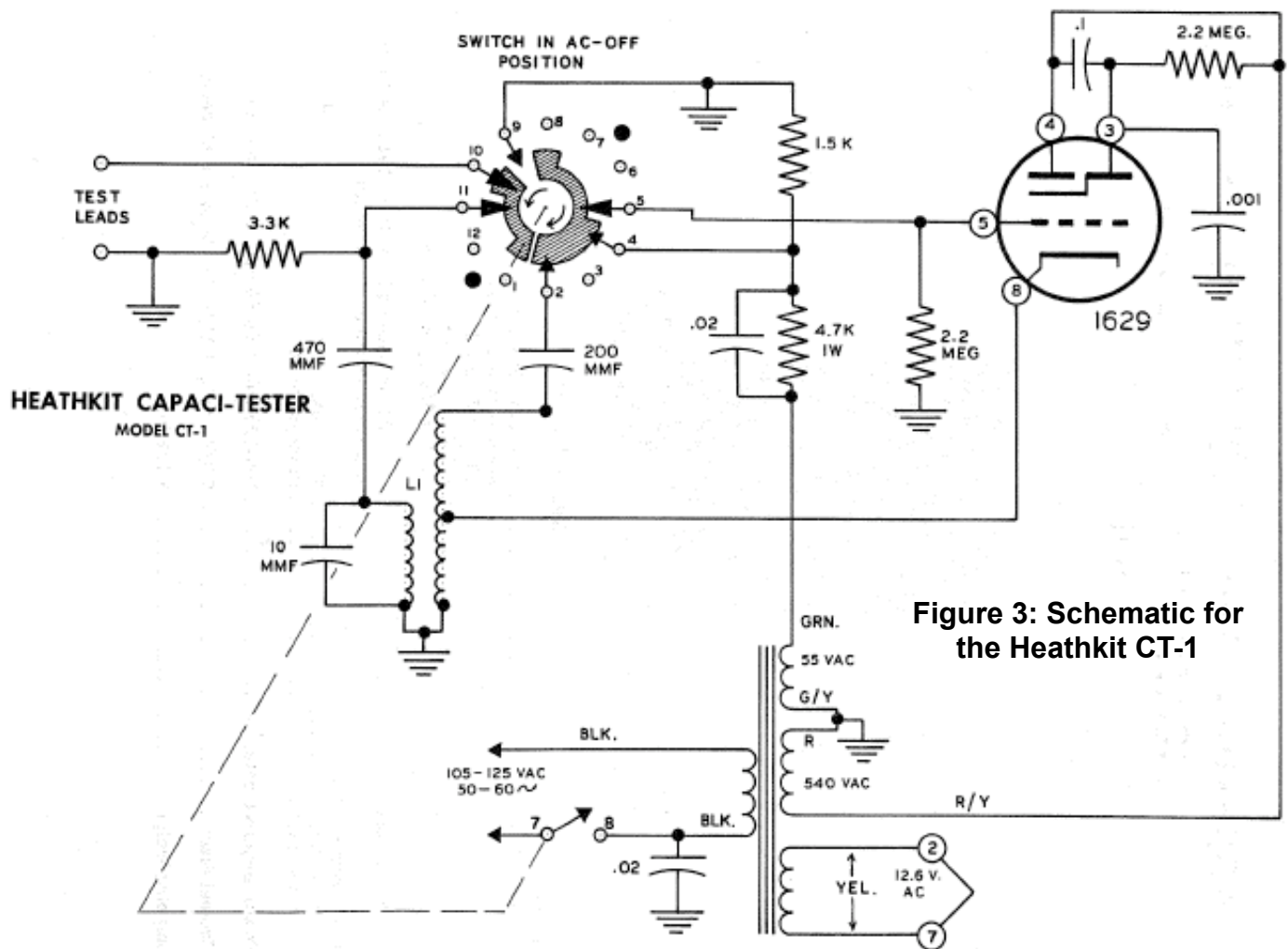



Figure 3: Schematic for the Heathkit CT-1

IT-22  
**\$10<sup>95</sup>**



**Heathkit "In-Circuit" Capacitor Tester . . . Time Saving Trouble Shooter**

- Spots open, shorted, intermittent capacitors without removal from circuit • "Eye" tube indicator • Checks paper, mica, and ceramic types • Built-in self-testing feature • Easy to use . . . single five-position control • Compact—Lightweight

Kit IT-22, 4 lbs. . . . . \$10.95

**IT-22 SPECIFICATIONS**—Range: Open Test, 50 uufd to infinity. Shunted by more than 2 K ohms at 50 uufd, 400 ohms at 100 uufd, 30 ohms at 350 uufd or more. Short test, up to 20 ufd shunted by at least 10 ohms. **Test frequencies:** Short test, 60 cycles. Open test, 19 mc. **Power requirements:** 105-125 V, 50-60 cycles AC, 5 watts. **Cabinet size:** 7 3/8" H x 4 1/16" W x 4 1/8" D.

Figure 4: May '65 Heathkit IT-22 Ad

**In Conclusion:**

I've never owned either of these devices. However I did use one some years back in a summer job I held. They did find bad capacitors, but didn't help if the capacitor was out of tolerance. As noted in Heathkit's specifications the device is not recommended, nor reliable, testing electrolytic capacitors, especially large valued ones.

73, from AF6C



*This article is Copyright 2012 R. Eckweiler and The OCARC Inc.*

*Remember, if you are getting rid of any old Heathkit Manuals or Catalogs, please pass them along to me for my research.*

*Thanks - AF6C*





# Western Amateur Radio Association



**NOW OFFERING  
ARRL AMATEUR RADIO EXAMINATION SESSIONS  
(All levels: Tech, General, Extra)**

**Sponsoring Club: Western Amateur Radio Association (WARA), Fullerton, CA**

**Exam Site Location  
La Habra Community Center  
101 W. La Habra Blvd.  
La Habra, CA 90631**

## 2013 Exam Session Schedule

Thurs, Jan 17  
Thurs, Feb 21  
Thurs, Mar 21  
Thurs, Apr 25 (Note: This is the 4<sup>th</sup> Thurs in April)  
Thurs, May 16  
Thurs, Jun 20

**Exam Sessions begin at 6:00 PM**

**Contact VE: George T. Jacob, Jr., N6VNI  
Phone: Home 562-691-7898 Cell 562-544-7373  
Email: N6VNI@ARRL.net**

**Pre-registration is requested and preferred – Walk-ins are welcome, but please arrive within 15 minutes of the published start time or call the contact VE if you are going to be late as the exam team will close the session if there are no candidates by that time.**

### On Exam Day Bring the Following Items

1. A legal photo ID (driver's license, passport) or Two forms of non-photo ID; e.g., birth certificate, social security card, library card, utility bill or other business correspondence with name of the examinee as it appears on the Form 605 and current mailing address.
2. Your Social Security Number (SSN) or FCC-issued Federal Registration Number (FRN).
3. If applicable, the original and a photocopy of your current Amateur Radio license and any Certificates of Successful Completion of Examination (CSCE) you may have from previous exam session. (Photocopies will not be returned.)
4. Two number two pencils with erasers, and a pen.
5. A calculator with memory erased and formulas cleared (no iPhones, iPads, etc.).
6. Test Fee: \$15.00 (cash or check).

If you fail an element and wish to retake it, we are required to charge an additional test fee. If you pass an element, we typically offer and encourage you to take the next element. We do not charge an additional test fee for this and it gives you the opportunity to see what the next exam element is like!

## OCARC GENERAL MEETING MINUTES 2012-11-16

The OCARC General Meeting was held at the Red Cross complex in Santa Ana on Friday evening, November 16, at 7:00 PM. There were a total of 42 members and visitors. All club directors were present, except W6JOR and K6PEQ, to provide a quorum for the meeting.

VP Robbie KB6CJZ introduced our speaker, OCARC member Arnie N6HC, who presented a talk on his recent DXpedition to

### “NH8S Swains Island...”

The DXpedition to Swains Island took place in September 2012. Arnie explained that Swains Island is located in the American Samoa group of islands.



Arnie N6HC shows Photo of the 2012 Swains Island DXpedition Team



Planning for a DXpedition requires logistics. Equipment was staged at QTH of N6HC for shipment.



A view of Swains Island with fresh water lagoon is seen from the air



Here is a photo of the CW Tent in operation. (L-R) are Arnie Shatz N6HC, Alan Brown K5AB, and David Greenhut N6HD



The beach made a perfect location for a vertical “Antenna Alley” with plenty of sand and salt water for the radials.



Being on a South Pacific Island provided spectacular sunsets for the NH8S Team

Arnie reported that the 2012 NH8S Team produced 105,455 QSOs during their 9-day event.

### OCARC Elections for 2013

Nomination Chairman, Nicholas AF6CF, presented a slate of nominations for club officers.



Nomination Chair AF6CF (R) was assisted by club Secretary W6HHC during the elections.

The OCARC members who were elected to offices to serve during 2013 are listed in the right-column.

### December Christmas Dinner

Paul W6GMU and Doug W6FKX announced that the OCARC Christmas Dinner will be held at 7PM on Dec 7 at the Jaegerhaus Restaurant in Anaheim at 2525 E. Ball Rd. (just west of the 57 Freeway). Dinner tickets will \$26 per person and can be reserved from the club treasurer Bob AF6C at [AF6C@W6ZE.org](mailto:AF6C@W6ZE.org).

### Elected 2013 Officers

President	Nicholas Haban AF6CF
V. Pres.	Tim Goepfinger N6GP
Treas.	Ken Konechy W6HHC
Secretary	Tim Millard KJ6NGF
Activities	Doug Britton W6FKX
Membership	Jay Hitchcock KI6WZU
Publicity	Kris Jacob KC6TOD
Technical	Bob Eckweiler AF6C
Dir-at-Large	Paul Gussow W6GMU
Dir-at-Large	Robbie Robinson KB6CJZ

### 2013 Field Day Planning

Dino Darling KX6D and Bob Harrington AA6PW announced that they had been appointed as the Field Day co-chairmen for the OCARC 2013 effort. 2013 FD will be special for the OCARC because it will be 80 years since the founding of the club. Dino KX6D explained that the first step was trying to gauge the number of volunteers who want to help during FD, determine a list of the resources that members can make available for FD, and determine the individual areas of interest (CW, digital nodes, set-up, chuck-wagon, etc.) of members.

Dino has prepared a FD questionnaire for members (see Page YY) that should be filled out and e-mailed back to him at [KX6D@W6ZE.org](mailto:KX6D@W6ZE.org).

### WARA VE Testing

George N6VNI announced he would be conducting VE ham radio license testing sessions (see flyer on Pg NN). The first testing session in 2013 will be held on Thursday, January 17.

Respectively submitted,

by Ken Konechy W6HHC  
OCARC Secretary



## CHRISTMAS PARTY Donors

This is a list of individuals and institutions that donated to the success of the party.

HRO	\$50 gift certificate, ARRL 2013 calendar
DX Store	Daiwa Wattmeter, cable adapter for Heil grand prize winner
Fried and Sandi Heyn	ARRL 2013 Handbook, 2012/2013 Repeater Guide on disc
Nicholas AF6CF	\$100, MFJ mobile speaker, dual digital clock, mallet and screwdriver
W6NGO Trust Fund	\$186 (to cover extra costs on the dinner expenses)
Tim N6GP	\$100
John KF6PRN	\$20
Jeff W6UX	\$20

The OCARC wishes to thank all its sponsors, donors and friends for their continued support

HAPPY 2013 TO ALL!

