The Prez Sez.....
By Kristin K6PEQ

PREZ SAYS:

I cannot believe we are already in October. We are heading into a great and busy time of the year.

We have the auction next week, the potluck at the end of the month, the operating in the park the beginning of November and the holiday party in December! Please check the newsletters and website for details on all of these upcoming events.

I hope you have a great month and I hope to see you at the upcoming events!

73’s
Kristin Dankert
K6PEG

The next general meeting will be:
Friday, Oct. 15th @ 7:00 PM
We will be meeting in Room 208 in the east Red Cross Building. The meeting for Oct. 15th 7:00 p.m. will be our Annual Auction!!!
2010 Board of Directors:

President: Kristin Dankert, K6PEQ  
(714) 544-9846  
K6PEQ@w6ze.org

Vice President: Paul Gussow, W6GMU  
(714) 624-1717  
W6GMU@w6ze.org

Secretary: Kris Jacob, KC6TOD  
(562) 619-8870  
KC6TOD@w6ze.org

Treasurer: Ken Konechy, W6HHC  
(714) 744-0217  
W6HHC@w6ze.org

Membership: Loran Dargatz, AF6PS  
(714) 777-9018  
AF6PS@w6ze.org

Activities: Dan Dankert, N6PEQ  
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N6PEQ@w6ze.org

Publicity: Robbie Robinson, KB6CJZ  
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KB6CJZ@w6ze.org

Technical: Bob Eckweiler, AF6C  
(714) 639-5074  
AF6C@w6ze.org

Directors-At-Large:  
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(714) 693-9778  
AF6CF@w6ze.org  
Larry Mallek, K6YUI  
(714) 533-0887  
K6YUI@w6ze.org

2010 Club Appointments:

W6ZE Club License Trustee: Bob Eckweiler, AF6C  
(714) 639-5074  
AF6C@w6ze.org

Club Historian: Bob Evans, WB6IXN  
(714) 543-9111  
bobev@netzero.net

RF Editor (rotating):  
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(562) 619-8870  
KC6TOD@w6ze.org

WEB Master: Ken Konechy, W6HHC  
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W6HHC@w6ze.org

Assistant WEB Master: Bob Eckweiler, AF6C  
(714) 639-5074  
AF6C@w6ze.org

ARRL Awards Appointee:  
Arnie Shatz, N6HC  
(714) 573-2965  
N6HC@aol.com  
Larry Beilin, K6VDP  
(714) 557-7217  
K6VDP@aol.com

OCCARO Delegate: Steve Brody, N1AB  
(714) 974-0338  
stevebrody@sbcglobal.net

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

145.400 MHz (-) PL 103.5 Hz  
Thur – 8:00 PM – 9 PM  
Nicholas AF6CF, 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.
Heathkit of the Month:
by Bob Eckweiler, AF6C

Crystal Broadcast Radio

Introduction:
I remember building a crystal set as a youngster. It had to have been before I was ten. The kit required you provide your own board and screw a mess of Fahnestock clips into it using a given layout. The board I was given for the project was hard and no drill was available so I had to start the holes with an awl and turn the screws into the hard wood. I found this easier to do without the Fahnestock clip in place which necessitated removing and then reinstalling the screw. The detector was a galena rock in a holder with a "cats-whisker" that you had to move around for the "sweet-spot where it would act as a diode.

A Fahnestock Clip

The Heathkit CR-1

Heathkit also sold a crystal radio set kit, the CR-1. This radio, like most, tuned the AM broadcast band from 540 KHz to 1600 KHz (kc in those days). The CR-1 is a simple kit that uses a sealed crystal diode instead of a "cats-whisker". It is double tuned and drives high impedance headphones. It is a cherished Heathkit among collectors. However you can build your own for a lot less than the kit seems to be going for on eBay.

The Heath CR-1 measures 6" x 3" x 2" wide. The case is bakelite with a gray-metal top plate that is the front panel. Similar cases are available today at a lot of stores including Radio Shack. The circuit, shown in Figure 1, is a double tuned circuit followed by the crystal detector circuit that feeds the headphones.

The CR-1 has two sets of binding posts and three controls. The left set of binding posts are for the ANTenna and GrouND (ground); and the right set are for the PHONES. The three controls, left to right, are ANTenna tuning, ANTenna switch and DETector tuning. The two tuning controls are 365 pF (µµf in those days) variable capacitors and the
Heathkit Article of the Month (continued)

ANT switch (middle control) switches in additional 350 pF capacitors across the ANT tuning variable capacitor. The detector circuit is just a crystal diode (type currently unknown) and relies on the built-in capacitance of the headset to augment detection.

Operation:
After hooking up an antenna and ground and a high impedance (2000Ω?) headset to the respective binding posts, one would set the antenna switch to the area of the station they wanted to tune in (high, medium or low frequency) and tune for a signal with the DET tuning, adjusting the ANT tuning for the maximum signal and switching the ANT switch if the tuning control ran out of effectiveness. There is no ON/OFF switch nor power source required as this radio uses only the broadcast energy as its power source.

Conclusion:
To my knowledge, Heathkit used no Fahnestock clips in the CR-1! Even so, I never owned one, but I always thought it would be fun to play with one for a few weeks. You can find more about building a replica of this kit in the November 2005 issue of CQ Magazine (page 80).

73, from AF6C

Remember if you come across any old Heathkit Manuals or Catalogs that you do not need, please pass them along to me.

Thanks - AF6C

Ken W6HHC presents Digital-ATV Introduction

Following the presentation Robbie and Ken gave a demonstration of their digital ATV station, transmitting a picture across the table. A question and answer session completed the well received program.

OCARC
General Meeting Minutes
Sept. 17, 2010

The September 17th meeting of the Orange County Amateur Radio Club was held in room 208 in the George M. Chitty Building of the American Red Cross - 600 Parkcenter Drive, Santa Ana. The meeting was in conflict with the SWD ARRL Convention in San Diego, limiting attendance.

The meeting was called to order at 7:05 PM by Vice President Paul Gussow - W6GMU. Following the Pledge, Paul introduced the guest speakers Robbie Robinson - KB6CJZ and Ken Konechy - W6HHC, both members of OCARC.

Program:
Robbie and Ken talked on the exciting new field of Digital Amateur TV (DATV). They showed their slide presentation that introduced the audience to various different techniques available to transmit digital ATV along with the pros-and-cons of each. (This OCARC talk was based on the presentation Robbie and Ken gave at the 2009 ARRL-TAPR Digital Communications Conference - DCC.)

Minutes - Continued on Pg 18
Last month we looked at the inductor and how it uses its ability to store and release energy in a magnetic field to oppose the change of current flow in a circuit. This month we are going to back up a bit and talk about magnets in general, specifically permanent magnets.

Permanent magnets come in numerous sizes and shapes. Figure 1a is a simple bar magnet; its ends are the poles of the magnet and one is named the north pole (N) and the other is the south pole (S). You cannot isolate the poles; if you cut the magnet in half (Fig. 1b) you get two weaker magnets each with a north and south pole.

When a piece of material is brought near a bar magnet it may be drawn to one of the poles of the magnet, or if shape and size permit, to both poles. This is true of only certain materials called ferromagnetic materials such as iron and cobalt. If the material is also a magnet then the attraction will be strong as long as the two poles are of opposite polarity. However if two like poles are brought in close proximity they will repel each other. The force of attraction or repulsion of two magnetic poles is proportional to the magnetic strength of the poles and inversely proportional to the square of the distance between them. That is, the force is four times stronger at 1/2 inch than at 1 inch.

One of the first uses of a permanent magnet was as a compass. People observed that if you floated a small magnetic needle in a liquid it orients itself in a north-south direction. Scientists discovered that the earth itself is a large magnet with its poles near (but not on) the axis of the earth's rotation. The floating magnetized needle is reacting to the magnetic earth. The pole that points north on the compass magnet is named the north pole and the other pole is named the south pole. Since opposite poles attract, the earth's magnetic pole in the north is actually the earth’s south pole.

**The Magnetic Field:**
Since a magnetic force acts over a distance, there must be a magnetic field created by the magnet. This field can be traced by moving a compass around a bar magnet. In figure 2 the compass needle points along the magnetic field path as depicted by the bold arrows. The direction of the field outside the magnet is defined as going from the north pole to the south pole. The magnetic field may be seen by placing the bar magnet below a sheet of paper and placing iron filings on the paper. Figure 3.
Magnetic Flux:
The lines depicted in figure 2 represent the magnetic field surrounding the bar magnet. In reality there are an infinite quantity of lines and these lines are called the magnetic flux. In the early days the strength of a magnet was symbolized by the amount of lines drawn and the "line" became the unit of magnetic flux. Today the flux is measured by the maxwell and the weber where 1 weber = 100 million maxwells. It should be noted that flux is a vector quantity as it not only has magnitude but also direction.

Figure 3 – Iron filings show magnetic field

Flux Density:
As depicted in Figure 2 the lines are closer in some places and farther apart in others. The amount of flux that passes through a given area 'a' is the flux density and is measured in gauss, where one gauss is one weber per square meter. Figure 4 shows the concept of Flux density.

The units of magnetism mentioned above are all named for scientists of the late 18th and 19th centuries. The weber unit is named for Wilhelm Eduard Weber (1804 - 1891), the maxwell unit for James Clerk Maxwell (1831 - 1879) and the gauss unit for Karl Friedrich Gauss (1777 - 1855).

Magnetic Materials:
In the realm of magnetism, material may be divided into three categories: diamagnetic, paramagnetic and ferromagnetic. Which category a particular material fall into depends on the nature of the atoms that make it up. All atoms have electrons moving in orbit around the nucleus. These electrons also spin on their own axis. Since a moving electron is a form of current, magnetic fields are generated by these motions.

In a diamagnetic material these fields tend to cancel and the material shows little or no magnetic tendencies. Nor do they tend to distort the magnetic field passing through them. (In actuality they very weakly tend to oppose the field.) Lead, silver and water are three diamagnetic materials.

In a paramagnetic material the fields created by the atoms only partially cancel. But since the atoms are distributed randomly, the material creates no net magnetic field. However, when subject to an external magnetic field the atoms align and a weak magnetic field is created that adds slightly to the applied field within the material. Aluminum is a common paramagnetic material.

In a ferromagnetic material the magnetic properties of the atoms reinforce one another resulting in strong magnetic fields. Atoms in a ferromagnetic material respond in groups called “domains” made up of numerous atoms that orient themselves parallel to each other. Since the domains are randomly oriented throughout the material, the net field tends to cancel. However, when the ferromagnetic material is subject to an external magnetic field the domains align and the flux density within the material becomes much higher than the flux due only to the external field. Also, when the external field is removed the domains tend to remain in their current orientation resulting in residual magnetism in the material. Thus ferromagnetic material can be magnetized and made a permanent magnet.
TechTalk - (continued)

Magnets may be damaged or destroyed by a large physical shock. The shock or even a violent vibration tends to randomize the orientation of the atoms in the magnetic material. Also if a ferromagnetic material is heated to a point above its “Curie Temperature” it will lose its magnetic properties due to the thermal agitation of the atoms breaking up and randomizing the orientation of the atoms in the domains.

Heating ferromagnetic material above the Curie point and then subjecting it to a strong magnetic field while it cools is a process for making a permanent magnet.

Summary:
This brief understanding of magnetic materials will help when we discuss electromagnets. The understanding of magnetic fields, flux and flux density will make the next section easier to comprehend.

73, from AF6C

Just a tidbit of information:

Call 811 before you dig, it’s free

As a SoCalGas customer, pipelines are likely to be located underground on your property. These pipelines are sometimes just inches below the surface. Before you dig for any reason, it’s important to know where natural gas pipelines are located. To protect your safety and avoid costly damage, please call 811 (toll free) at least two business days before you break ground.

Get more tips before you dig.

CHECK THIS OUT!

The next time you are at HRO check out the 2011 CQ Calendar… our very own members-the PEQ’s - Kristin & Dan Dankert’s HAM Radio Shack is featured in the NEWEST calendar!
The TAPR Digital Communications Conference, an international gathering of hams interested in digital communications, was held September 24-26 in Portland, OR. Robbie-KB6CJZ and Ken-W6HHC were invited to present another talk on Digital-ATV. The presentation was called:

Testing a Digital-ATV Station using DVB-S

The TAPR Digital-ATV presentation by Robbie and Ken went very well....and appeared to be well-received...the audience had good questions. Their testing results demonstrate that DATV really does produce higher-quality video than analog-ATV under adverse path conditions!!

They both made the PowerPoint presentation remotely from the comforts of their homes to the TAPR DCC audience in Portland (using SKYPE and Adobe-ConnectNow). They have also determined that COAR (City of Orange) is the first RACES group in the nation to be using Digital-ATV in its exercises.

The entire PowerPoint file is available on the OCARC web site at www.W6ZE.org/DATV/
It’s that time of year again. The OCARC annual ham radio auction is Friday, October 15th 2010 at 7:00 PM.

Bring your gear to sell. Come bid on other equipment.

This is always a fun event. Bring your ham radio friends too!

Location and a map to our auction are on the next page or visit our website for info.

The Orange County Amateur Radio Club “OCARC”
P.O. Box 3454
Tustin, CA 92781
Web: www.w6ze.org
Email: ocarc_info@w6ze.org
Auction Rules

The OCARC Annual Auction will take place on Friday evening, October 15th, 2010, at 7:00 PM at the American Red Cross facility located at 600 N. Parkcenter Drive, Santa Ana. The room will open at 6:00 PM to allow registration, set-up and viewing. All buyers and sellers are welcome. The following rules for the auction will be in effect:

1. Only ham radio or electronic equipment / items will be auctioned (i.e.: no fishing equipment, etc)

2. Buyers and Sellers must register at the door with the OCARC Treasurer. There is NO registration fee.

3. Sellers should number each item in their lot. A tag should indicate the minimum bid they expect.

4. Only 3 items from a Sellers lot will be auctioned during each turn. After auctioning 3 items, the auctioneer will move on to the next lot. After the first 3 items from every lot have been offered for bidding, the auctioneer will start the second round of auctioning with the next 3 items in lot #1.

5. Auction bidding will take place as follows:
   a. $0.00-to-$5.00 bidding will take place in $0.50 increments.
   b. Over-$5.00-to-$50.00 bidding will take place in $1.00 increments.
   c. Over-$50.00-to-$100.00 bidding will take place in $5.00 increments.
   d. Over-$100.00 bidding will be in $10.00 increments.

6. Rules 4 and 5 may be changed at the auctioneer’s discretion to expedite the auction.

7. Payments for purchased items are due at the end of the auction and shall be by cash or check with the appropriate ID. No two-party checks or credit cards are allowed. Disbursements to the Sellers will be by OCARC check, only. Sellers will be charged 10% of the selling price for items sold by OCARC.

A special table will be set up for donated items. The proceeds of donated items will go to the OCARC.

The American Red Cross
George M. Chitty Building
600 Parkcenter Drive
Santa Ana, CA.
Second Floor, Room 208*
(Enter from the West Side.)

Note: The door locks after 7 PM. If no one is there to let you in...call W6ZE on the talk-in frequency for admittance.

TALK-IN 146.55 MHz Simplex

* Room is subject to change.
Come Join us for "Portable in the Park"!

WHO: All OCARC members, family, friends and curious strangers welcome!

WHAT: Operate solar-powered Ham radios (SSB and CW) in a beautiful park!

WHERE: Jeffrey Open Space Preserve in Irvine, CA (33.703564,-117.753804)

WHEN: November 6th, 2010 9:00 AM to 5:00 PM

Please join us for a fun day of Ham operating in a peaceful park setting located in North Irvine. We will have 3 100W stations setup for your enjoyment (SSB and CW modes). Jeff (W6UX), Nicholas (AF6CF), and Paul (W6GMU) will be setting up their portable, solar-powered stations beginning about 9:00 AM (help appreciated so we can get on the air faster!).

This is an excellent opportunity to see what it takes to get on the air using only batteries, replenished by a large solar panel. We anticipate being able to operate all three stations at up to 100 watts indefinitely, or at least well into the late afternoon if it's not so sunny.

Bathrooms are close by and there is a small picnic area with several tables (please bring your own food and drinks).

Don't forget to bring your logbook!

Directions to the Park:

Take INTERSTATE 5 to the JEFFREY ROAD Exit in Irvine

Right on JEFFREY ROAD

Right on LONG MEADOW

Left on VINTAGE

Left on LAMPLIGHTER

Right on GRASSLAND BUNGALOW

Park between TRIPLE and SHEPARD; park is on the left.

Take one of the two short dirt trails to the picnic tables.

For a satellite overview of the area, visit maps.google.com and paste 33.703564,-117.753804 into the search box.
PUMPKIN PORK CHILI

INGREDIENTS:
- 1 tablespoon vegetable oil
- 1 cup chopped onion
- 1/2 cup chopped green bell pepper
- 1/2 cup chopped yellow bell pepper
- 1 clove garlic, minced
- 1 pound ground pork
- 1 (14.5 ounce) can diced tomatoes
- 2 cups pumpkin puree
- 1 1/2 tablespoons chili powder
- 1/2 teaspoon ground black pepper
- 1 dash salt
- 1/2 cup shredded Cheddar cheese
- 1/2 cup sour cream

DIRECTIONS:
Heat the oil in a large skillet over medium heat, and saute the onion, green bell pepper, yellow bell pepper, and garlic until tender. Stir in the pork, and cook until evenly brown. Drain, and mix in tomatoes and pumpkin. Season with chili powder, pepper, and salt. Reduce heat to low, cover, and simmer 20 minutes. Serve topped with Cheddar cheese and sour cream.
Saturday, October 30th

QTH: Dan (N6PEQ) & Kristin (K6PEQ) home

WHEN: October 30th – starts at 1 pm

WHAT TO BRING: You, a friend or significant other and a food item. If you are unable to attend the breakfast or club meeting in October to sign up for food, please email Kristin at k6peq@w6ze.org. We are looking for appetizers, side dishes and desserts.

We will be providing hamburgers & hot dogs. We are encouraging you all to come in costume. Who says only kids can play dress up!?!? We hope you will be able to come and have fun!

PLEASE RSVP & Sign up for food by Wednesday, October 27th!
OCARC HOLIDAY PARTY

We are going to have a great December Raffle! There are a lot of great prizes and tickets are only a dollar. What a deal! Also, there will be a special raffle for just the ladies. These tickets will not be sold but will be given just for coming. We hope that you will be able to come and share in our fun event!

It's Time to Party!

ALL THE INFO!

WHEN: FRIDAY, DECEMBER 10th
TIME: 7 p.m.
COST: $24 per ticket
WHAT: Dinner, beverage, Dessert, Tax and Tip included in ticket price plus 1 raffle ticket.
WHO: Everyone!
WHERE: Jagerhaus Restaurant
RSVP: Please contact Kristin, K6PEQ by Friday, Dec. 3rd @ k6peq@w6ze.org or 714-544-9846.

Jagerhaus
2525 East Ball Road off of the 57 Fwy.
PLAY THE DOT GAME!

Grab a friend and take turns filling in a line. See who can connect the most lines to form the most boxes.

Who made the most boxes?
The ORARC Board meeting was held at the JagerHaus Restaurant, 2525 East Ball Road, Anaheim, at 8:14AM Saturday, April 10, 2010. There were a total of 7 directors and 3 visitors – Jeff W6UX, Hank W6HTW, Ron WB6FRV and Steve N1AB. There was a quorum with the directors’ present.

**DIRECTOR REPORTS:**
- Vice President Paul W6GMU has speakers for the September, October is the Auction, November is pending.
- Treasurer Ken W6HHC – Balance on hand $5,400.00. Income is based on membership, Field Day and Opportunity Drawings.
- Secretary - Kristine – KC6TOD – Orange County Fair great success, thank you to all who helped.
- Membership – Loran – AF6PS – absent but sent email stating that membership is increasing
- Publicity – Robbie KB6CJZ – auction flyer very good.
- Technical – Bob AF6C – over the last 10 years 280 badges have been produced.
- Director at Large – Nicholas AF6CF will discuss Auction in New Business
- Director at Large – Larry K6YUI mentioned the DX Club auction and the Wayne & Sharon show...

**OLD BUSINESS:**
- Speakers – November if needed use video, invite Dick Norton N6AA to speak
- Auction – Jim Shryne & Dan Dankert to be auctioneers at this time – flyers distributed
- Holiday Party will be December 10th
  - Motion made by Ken W6HHC to approve budget of $950.00 both raffle & ladies prizes, seconded by Larry K6YUI.
  - Grand prize to be donated by Kristin & Dan – “The PEQ’s”

**NEW BUSINESS**
- Social Events –
  - Antennas in the Park Oct. 9th, sponsored by Fullerton Radio Club
  - October Potluck at the home of Kristin & Dan Dankert – October 30th, 1:00 PM, Halloween Theme
  - Jeff W6UX & Nicolas AF6CF will be planning a mini field day operation at a park in Irvine. Details to come.

**Good of the Club**
Ken W6HHC is working on a printed circuit board project for Digital-ATV.

Motion made to adjourn meeting by Larry K6YUI and seconded by Paul W6GMU.

Meeting adjourned 9:15 AM

Respectfully submitted:

Kristine Jacob KC6TOD
Secretary
Attention Members!!!

Do you know a fellow ham that would be interested in joining OCARC? Do you have a friend that is curious about ham radio and wants to learn more about our hobby? Why not invite him or her to one of our exciting monthly meetings?!?! The meetings are fun, informative and entertaining. And don’t forget about the raffle prizes too. So bring a visitor to one of our meetings, and help your club expand!

Make sure to inform your friends of our club’s website, which is always kept up to date. Information on club meetings, activities and our newsletter archive make it a worthwhile site to surf!  [http://www.w6ze.org](http://www.w6ze.org)

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**2010 ARRL CONTEST SCHEDULE**

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<td>ARRL November Sweepstakes (CW)</td>
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<td>20 - 23</td>
<td>ARRL November Sweepstakes (Phone)</td>
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<tr>
<td>December</td>
<td>3 - 6</td>
<td>ARRL 160 Meter Contest</td>
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<td></td>
<td>11 - 13</td>
<td>ARRL 10 Meter Contest</td>
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OCARC Gen Mtg Minutes – cont’d

The Digital-ATV Demo Camera is focused on OCARC VP Paul-W6GMU

Thank you Robbie and Ken.

Prior to the break badges were picked up by Dee - N8UZE and Jay - KI6WZU. Approximately thirty-one people were in attendance. A break was held from 8:10 to 8:31 PM.

The business part of the meeting was called to order at 8:31. A roll call of officers was taken: six officers were present and four were absent. Present were VP Paul - W6GMU, Treasurer Ken - W6HHC, Publicity Robbie - KB6CJZ, Technical Bob - AF6C, and Directors at Large Larry - K6YUI and Nicholas - AF6CF. Absent were President Kristin - K6PEQ, Secretary Kristine - KC6TOD, Activities Dan - N6PEQ, and Membership Loran - AF6PS.

Old Business:
Ken - W6HHC reminded all that the auction will be held in lieu of the October 15th general meeting.

New Business:
The October 30th Pot-Luck was announced. Costumes are optional, but encouraged. Starting time is 1:00 PM. Details will be added to the website.

Jeff - W6UX and Nicholas - AF6CF are planning a picnic/radio gathering at a park in Irvine November 6th. Members are invited. Jeff will follow up with more information to be posted on the web-site.

Show and Tell:
No one had any items for show-and-tell.

Respectfully submitted,
Bob - AF6C
for Kristine - KC6TOD.