



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLVI NO. 01

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

January 2005

The Prez Sez:

Looking back over 2004, I think the OCARC had a really good year! Looking forward, I am excited because I think that the OCARC will do a lot of fun things and exciting activities and may even have a better year in 2005.

This year will be my fourth term as "el Presidente" of the OCARC. I Served once during the 1970's, once during the 1980's, once during the 1990's, And now I am serving during the 2000's. What excites me most is that that we, the club, have a lot of knowledgeable and exciting talents on the Board of Directors this year. Already with the first Board meeting under our belt, there are many exciting new ideas being offered. This will be a fun board for me to work with and the fun board will create lots of fun opportunities for OCARC.

It is important for you, the members, to recognize that this is *YOUR* club. My job is to make sure that the OCARC is fun place for all Hams to come together. Not a lot of "boring business" ...not a lot of "hard work without any recognition" ...but a place to come and meet and enjoy conversations with other Hams. ...a place to learn a little more about some aspects of this multi-faceted HAM radio hobby....a club that has nets that meet regularly to give members and visitors an opportunity to

[See *The Prez Sez*, page 3]

Reminder: It's time to pay your club dues for the 2005 year.

You must pay by March 31st to remain a member in good standing and be included on the private roster. Dues remain at \$20, the same as last year (Bet your cable TV company cant say that!) Please pay Cheryl, KC6KTT at a meeting or breakfast, or mail your dues to our P.O. Box.

January Program

*Learn what ARDF is all
about!*



Come to the January meeting and learn how 19-year old Jay-W6JAY

got started in ARDF and what kind equipment is needed. Jay has won 14 medals in international competition and plans to go to the 2005 USA ARDF Championships in Albuquerque, NM and to the 2006 World Championships in Bulgaria. Jay gave this talk at the 2004 ARRL Southwestern Convention in Arizona to a standing room only crowd but now there's more added. There's lots more so you have to come see "Getting Started In ARDF".

Don't miss it. All members and visitors are welcome.

The next general meeting will be:

**Friday, Jan 21st
@ 7:00 PM**

We will be meeting in Room 208
in the **east Red Cross Building**

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**THE ORANGE COUNTY
AMATEUR RADIO CLUB,
INC.**
P.O. Box 3454, Tustin, CA 92781



2005 Board of Directors:

President:

Ken Konechy, W6HHC
(714) 744-0217
kkonechy@pacbell.net

Vice President:

Willie Peloquin, N8WP
(714) 318-4047
n8wp@arrl.net

Secretary:

Rich Helmick, KE6WWK
(714) 343-4522
R2535@sbcglobal.net

Treasurer:

Cheryl Peloquin, KC6KTT
(714) 318-4047
Chercool@escapees.com

Membership:

Cindy Hughes, KC6OPI
(714) 971-3448
cr_hughes@juno.com

Activities:

Kristin Dankert, K6PEQ
(714) 832-1227
kdankert@comcast.net

Publicity:

Bob Eckweiler, AF6C
(714) 639-5074
af6c@arrl.net

Technical:

Kenan Reilly, N6CCE
(714) 543-5073
n6cce@yahoo.com

Members At Large:

Dan Dankert, N6PEQ
(714) 544-9846
N6PEQ@DXer.com

and...

Steve Brody, KB1GZ
(714) 974-0338
stevebrody@sbcglobal.net

2005 Club Appointments:

W6ZE Club License Trustee:

Bob Eckweiler, AF6C
(714) 639-5074
af6c@arrl.net

Club Historian:

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

RF Editor (acting):

Kenan Reilly, N6CCE
(714) 543-5073
n6cce@yahoo.com

WEB Master:

Ken Konechy, W6HHC
(714) 744-0217
kkonechy@pacbell.net

ARRL Assistant Director:

Ken Konechy, W6HHC
(714) 744-0217
kkonechy@pacbell.net

ARRL Awards Appointee:

Larry Beilin, K6VDP
(714) 557-7217
k6vdp@aol.com

OCCARO Delegate:

Kristin Dankert, K6PEQ
(714) 534-2995
kdankert@comcast.net

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:

First Saturday of the month
at 8:00 AM
CowGirl's Cafe, Too
2610 S. Harbor Blvd
(just south of Warner)
Santa Ana, CA

Club Nets (Listen for W6ZE):

7.086 ± MHz CW OCNW
Sun- 9:00 AM – 10 AM
Rick KF6UEB, Net Control

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

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 more.

Club Dues:

Regular Members ...\$20
Family Members* ...\$10
Teenage Members ..\$10
Club Badge**\$3

Dues run from January thru December & 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 charge if you'd like to have your badge mailed to you.

Monthly Events:

[The Prez Sez, from page 1]

trade ideas and recent news between formal meetings. The rest of the board and the membership create the fun!!!

Amateur Radio and OCARC may have some challenges this year. Propagation strength is still declining (booo, hissss!!!). There is a threat that interference by BPL installations may severely impact Ham radio and SWL enjoyment in the U.S. (luckily, there are no announced BPL trials planned for Southern California at this time).

I also want to give recognition to both Bob Buss - KD6BWH and Bob Eckweiler - AF6C who were both co-winners of the "Good-of-the-Club" awards for 2004. This award recognizes two tireless members who have helped the OCARC be a better club, each in many ways. MNY TNX!!! Finally, I am pleased to see that we have five members who have offered to take turns at being "rotating editors" for the OCARC monthly newsletter. That is: these rotating editors just prepare the newsletter for one month and then get four months "off", for good behavior. I really believe that the OCARC newsletter is important and can hold a club together.

I hope to see you all at the meeting...

de Ken W6HHC ■

Contest Calendar

.....

Here are just a few of the Ham Radio contests that are coming your way. Visit www.arrl.org for rules and details.

ARRL VHF Sweepstakes
January 22 - 24

School Club Roundup
February 14 - 19

ARRL Int'l DX Contest (CW)
February 19 - 20

ARRL Int'l DX Contest (SSB)
March 5 - 6

OCARC Fights BPL with USD

OCARC Raises \$550.00 in Donations to Help ARRL with BPL Threat

By Ken Konechy W6HHC

I am proud to report that the members and the board of the OCARC pulled together a total of \$550 to contribute to the ARRL Spectrum Defense Fund to fight the threat of Broadband-over-Power-Lines (BPL). A check for \$550 (representing \$250 from the treasury of OCARC and \$300 that came from the wallets of individual club members) was mailed to ARRL in December.

I have made several "speeches" that the interference levels currently set by the FCC for BPL do not deal with this new spread-spectrum technology sufficiently and allow significant interference (...I mean "QSO-ending" interference) on HAM bands and SWL frequencies. This BPL interference threat over unshielded power lines has the potential to become the biggest threat that has ever faced Amateur Radio spectrum from 1.8 MHz to 50 MHz. I am convinced that the best hope for HAM radio to contain BPL interference lies in the current efforts of the ARRL.

The OCARC passed the "donation can" at three meetings and the members responded in an outstanding manner. I would like to give special recognition to Frank Smith WA6VKZ who personally donated \$80 at the club breakfast for the ARRL. Thanks Frank!!! ...and thank you to all members who donated to this worthy effort.

I promise to keep the club aware of the progress by ARRL on this BPL interference threat. ■

A HISTORY of OCARC PRESIDENTS

By Ken Konechy W6HHC with great assistance from our Club Historian, Bob Evans - WB6IXN

YEAR

2005	W6HHC	Ken Konechy
2004	N1AB	Steve Brody
2003	KQ6JD	Lowell Burnett
2002	KE6WIU	Cory Terando (now AE6GW)
2001	KD6BWH	Bob Buss
2000	K6LDC	Larry Hoffman
1999	WA6VPP	Bud Barkhurst
1998	KD6BWH	Bob Buss
1997	WA6VKZ	Frank Smith
1996	AF6C	Bob Eckweiler
1995	N6XTJ	Jim Roberts
1994	KJ6ZH	Chris Breller
1993	KC6TAM	Jane Breller
1992	WA6VKZ	Frank Smith
1991	W6HHC	Ken Konechy
1990	KJ6ZH	Chris Breller
1989	WA6VKZ	Frank Smith
1988	W6HHC	Ken Konechy
1987	N6JSV	Jim Talcott
1986	WA6VKZ	Frank Smith
1985	AF6C	Bob Eckweiler
1984	KA6IMP	Chris Breller (now KJ6ZH)
1983	W6IBR	Al Watts
1982	KA6HNY	Robin Hoff
1981	WA6VKZ	Frank Smith
1980	WA6FOW	Ernie Prichard
1979	WB6IHZ	Terry Mathers
1978	WA6LFF	Jim Kingsbury
1977	WA6WZO	Fried Heyn
1976	WB6PEX	Martin Raymond
1975	WA6LHB	Art Sheldon (now K7ZE)
1974	W6HHC	Ken Konechy
1973	WB6QNU	Bob Eckweiler (now AF6C)
1972	WA6FIT	Ron Cade (now W6ZQ)
1971	WB6CQR	Billy Hall (now N6EDY)
1970	WB6UDC	Jack Hollander (now N6UC)
1969	WA6ROF	Jerry VerDuff (now ADØA)

[See History of Presidents, Page 5]

Ham Radio Station Protection – Part 1

Courtesy of the PolyPhaser Corporation

With all the stormy weather we have been seeing in Southern California recently, I thought it would be perfect timing for an article on lightning protection. This is part one in a series discussing an overview of Lightning Protection for Ham Radio Stations.

Notes

Proper lightning protection for a ham radio station can involve more variables than any other type of radio site. The antenna location will establish the grounding requirements, while the station location will drive the protection requirements.

The primary rule for surviving a lightning strike is still the same no matter which of the many possible variations you have: all equipment elements must be connected to a single, low impedance ground system. This includes the antenna, the antenna support (pole, tower, etc.), and all of your station's input and output protectors. (I/O's: antenna, power, telephone, rotor, etc.).

Let's examine the significant elements of a good grounding and protection scheme to help you construct an installation that will survive a direct lightning strike.

We begin with choosing the antenna location. Location and antenna type will dictate the size and location of the earth system needed to disperse the strike's energy. The sooner the ground system is able to spread out the energy, the better the chances of preventing it from

traveling to your equipment. Almost 90% of strikes will be electrons that, due to like charge, repel and spread out.

The antenna ground system provides the interface to the earth body. As we will see later on, the ground system is formed by a set of ground rods interconnected below grade with bare radials.

A good protection scheme would also include a single point ground within the ham shack. This single point ground is used to mount all of the protectors and to provide a ground for all of the equipment chassis. This interior single point ground is connected to an external ground system (composed of radials with ground rods) with a low impedance copper strap. The tower ground system and the single point ground system must be interconnected. This interconnection should be below grade and with a bare low inductance conductor. The coax cable shield must not be the only interconnection between ground systems.

Three Techniques Used to Increase the Effectiveness of a Single Point Ground System

Every conductor has measurable inductance. Similarly, ground conductors exhibit normal inductance before they go below grade. Once in the ground, the inductance of a bare conductor is shunted by the earth's conductivity. If the soil at the grounding location is not very conductive, three things can be done to help the situation.

- Increase the surface area of the conductor, decreasing its normal inductance.
- "Dope" the soil to increase its conductivity shunting the inductance of the in-ground bare conductors.
- Install additional bare radial lines with ground rods which will effectively parallel the inductance and reduce the overall system inductance.

In some locations it may be necessary to utilize all three of these techniques for the best results.

Let's examine each one.

Conductor Surface Area

The most effective material for a ground system conductor is copper strap. Copper as a metal is a good electrical conductor, only moderately attacked by ground and air borne acids, and should have a life span measured in years.

Since lightning has a large portion of its energy in the LF range, it will behave like an RF signal. (See "Lightning Overview" and "Coaxial RF Protectors" for a more detailed discussion) That means the energy will conduct on the skin of the conductor (skin effect). Thus, the surge current will only ride on the outermost surface of the conductor. Such currents following a round-member conductor will not make extensive use of its large cross sectional area. With a 1-1/2 inch [38.1 mm] or larger flat strap of at least 26 gauge (0.0159 inches) [0.4 mm], both surfaces will conduct the surge.

Soil Doping

Water in its purest form is an insulator. Ionic salts when mixed with water make ions. The earth is a conductor because of the number of ionic salts present in the soil. Therefore, conductivity can be improved by adding more ions to the soil.

Soil doping can be done by either adding water or a saline solution to the soil around the grounding system. If the soil already has a sufficient amount of naturally occurring salts, adding water will free the ions and improve conductivity. The more ions (salts) available, the less water that will be needed to reach a given level of conductivity.

If few natural ions are available, salts, such as Epsom salts, can be added to the soil to increase the conductivity. Depending on the amount of rainfall, doping the ground system radials with 4 pounds of salt per linear foot and 20 pounds per rod may last approximately two years.

[See **Lightning**, page 5]

[Past Presidents, from page 3]

YEAR

1968	W6COJ	Dave Hollander
1967	WB6GPK	Jim Hill
1966	WA6YWN	Jack Shaw
1965	K6KTX	Rolland Miller
1964	W6WRJ	Ralph Alexander (now W6RE)
1963	W6DEY	Roy Maxson
1962	K6LJA	Ted Glick
1961	K6IQ	Roy Morriss
1960	K6TXS	Charles (Ed) Edwards
1959	W6BVI	Ken Kesel
1958	W6BVI	Ken Kesel
1957	- CLUB DISBANDED -	
1956	W6HIL	Bob Swenson
1955	W6BVI	Ken Kesel
1954	W6UPP	Marinus Conway
1953	<i>Probably only informal meetings, no officers?</i>	
1952	W6QZQ	Horace Bates
1951	W6LDJ	Sam (Mac) McNeal -
<i>Probably only informal meetings, no officers?</i>		
1949	W6CGF	Chuck Lunder
1948	W6BWO	Dale Bose
1947	W6ALO	Tommy Gentges
1946	W6DEY	Roy Maxson
1945	W6DEY	Roy Maxson
1944	- ALL OFF TO WAR!!	
1943	- ALL OFF TO WAR!!	
1942	W6IBN	Roy Cumpston
1941	W6BAM	Shelley Trotter
1940	W6KLU	Harold Christensen
1939	<i>Probably only informal meetings, no officers?</i>	
1938	W6NSA	Les Gates
1938	W6ADT	Noral Evans
1937	W6LYN	Noral Evans (Also reissued W6ADT)
1936	W6LYN	Noral Evans (Also reissued W6ADT)
1935	- CLUB DISBANDED!!	
1934	W6IGO	Earl Moore
1933	W6IGO	Earl Moore

Ground Radials

Radials are the most cost effective grounding technique considering system impedance, material cost, and installation labor. If one radial gives "X" resistance, then two will deliver an equivalent "parallel rule" plus 10%. This rule only holds true when the soil has the same conductivity over the entire radial area. After the first two radials, you will need to double the number of radials each time to continue with the parallel-plus rule.

Radials do have a limit on their effective length. If the surge energy has not been launched into the soil within the first 75 feet [22.86 meters], the inductance of the radial will prevent any further effective prorogation. Therefore, as a general rule, all radials should be at least 50 feet [15.24 meters] long but no longer than 75 feet.

Ground rods should be placed along the entire length of each radial. The most cost effective spacing between rods for normal (grassy) soil is two times the length of a rod into the ground. If 8 foot [2.44 meters] rods are used, they should be placed on 16 foot [4.88 meters] centers.

If the soil is not normal (e.g., very dry or sandy), the separation may be reduced in order to minimize the interconnect inductance. It doesn't hurt to have the rods too close, it only costs more in material and labor.

Ground Measurement

Since most soils are stratified, the best way to determine the effectiveness of a ground system is to measure it. The simplest way to determine the sub-layer conductivity is to measure the first ground rod, one foot at a time, as it is hammered into place. This technique can provide a profile of the lower layers relative to the first foot. Most earth resistance meters measure only dc or low frequency ac resistance of the ground system. Although the lightning strike

is dc, due to the fast rise time to peak current, there is significant RF energy. Since there is a high frequency component, the inductance (effecting transient response) of the ground system is important. Without using very expensive specialized test methods, the only way to ensure a low impedance ground system is to follow the suggestions given for conductors, doping and radials.

Next month well take a look at tower considerations, antenna location, and even grounding your coax. ■

de Kenan, N6CCE

A XYL Says Thank You

A letter of thanks from the XYL of Charles West, KB6TWA to all the OCARC club members

"Bob, I just need to thank you for the beautiful article written up in the [RF] news letter. My Charles would have been so proud to read "his column." All the work done at our home with you dear people will always be appreciated - always. Again Charles would have been so proud to know people really do care. Want to thank you again for taking the time to do the "Silent Key" [article].

Forever grateful,

Louise West

P.S. Charles loved the Radio Club. Sorry he wasn't able to do more for the club"

LA City Marathon XX Needs Your Help



It's that time of the year again, and another LA City Marathon is upon us. In keeping with tradition, Amateur Radio operators throughout Southern California are being called upon to help out.

Greg Powell – KD6AIS, of the Orange County Council of Amateur Radio Organizations (OCCARO), is asking Hams to consider volunteering for this spectacular event.

The 2005 LA City Marathon will be held on Sunday, March 6th. Your interest in willing participation will be truly appreciated and will help to make this years Los Angeles Marathon a success. Greg will once again act as the coordinator for the HAM Radio Operators. He will be in contact with all registered participants in the next couple weeks or so, to set up the date, time, and location for the HAM Radio Orientation.

Thank you for your dedication and commitment to making the 2005 Los Angeles Marathon even better than 2004.

Registration can be completed online at: http://www.doitsports.com/volunteer/jobs-by-date.tcl?event_id=221
Select "Radio Operator" under "Race Day Sunday March 6, 2005". Don't forget to register online as it help with t-shirt counts and other administrative chores.

OCARC General Meeting Minutes

For December 2004

Please note that since there was no general meeting in December 2004 and only the Christmas Dinner, there will be no General Meeting Minutes reported in this issue of the RF.

OCARC Board Meeting Minutes

For January 8, 2005

Ken, W6HHC, called the board meeting to order at 8:52 AM at **Carrow's Restuarant** in Orange. All board members were present except the Secretary - Rich, KE6WWK, and Membership - Cindy, KC6OPI. Both had been excused due to other commitments. Bob, AF6C, volunteered to act as Secretary and take meeting minutes. A total of 14 members and visitors attended the breakfast.

Board Job Descriptions:

Ken gave out a list of board member job descriptions as they appear in our Bylaws, as well as his refined descriptions, and discussed each one. Some highlights are:

VP:

A suggestion for organizing a pre-meeting dinner for some of our guest speakers.

Treasurer:

Keep members aware of the benefits of joining the ARRL or renewing their membership through the club.

Secretary:

Provide the President with a list of unfinished business for continuity.

Membership:

Provide extra copies of RF for

distribution at HRO. Send out RF to new hams in the area.

Activity:

Coordinate meeting refreshments as needed (coffee, etc.) Be sure the coffee pot is off after the meeting. Breaking even on the raffle is less important than drawing members to the meeting.

Technical:

Provide technical articles for RF. Act as an 'Elmer' to new member hams.

Publicity:

Provide publicity as required. Support club recognition at HRO.

Directors at Large:

Assist the Board in decision making; fill in for absent board members.

Club Finances:

Ken, W6HHC, reviewed the unaudited 2004 financial report and discussed how the club spent its money each year.

Bob, AF6C, reported that the 2004 audit would be held immediately after the meeting.

Ken, W6HHC, announced that the required members would proceed to the Bank after the audit to sign new signature cards.

OCCARO Representative:

With the possibility of Bob, KD6BWH, moving to North Dakota, Ken asked for a volunteer to represent the club at the OCCARO meetings. Kristin, K6PEQ, volunteered. Bob will remain as a co-representative.

Field Day:

Bob Buss, KD6BWH, is currently storing some FD equipment - four

[See *Minutes*, page 8]

**OCARC - W6ZE
Financial Report for 2004**

Statement of Receipts and Disbursements with Cash Balances
For Twelve Months Ending December 31, 2004

Receipts:

Auction In	\$1274.50
Badge Income	22.00
Donation - W6NGO Trust Fund	300.00
Donations - FD	0.00
Donations - Misc.	25.00
Donations - BPL (TO ARRL)	300.00
Dues, Family	35.00
Dues, Membership	795.00
Interest	10.66
Raffle Reg. Income	<u>649.00</u>

Total Receipts **\$3,411.16**

Disbursements:

Auction Expense	999.00
Awards & Plaques	131.62
Badges Expense (Reunion)	14.31
Bank Svc. Chg.	3.00
Donation - OC Fair	50.00
Donation - BPL (TO ARRL)	550.00
Dues (OCCARD)	40.00
Field Day Food	152.96
Field Day Other	57.18
Insurance Expense	327.00
Legal (State of California)	20.00
PO Box Rental	38.00
Program Speaker Expense	91.89
Raffle Expense	586.54
Refreshments Expense	121.83
RF Postage Expense	116.55
RF Printing Expense	60.28
Web Page Exp.	86.86
World Radio	65.00
Christmas Party Expense (2003)	<u>67.18</u>

Total Disbursements **\$3,579.20**

Net **(\$168.04)**

Cash - Beginning Balance January 1, 2004

Checking Account	212.85
Savings Account	2,029.31

Cash - Beginning Balance **\$2,242.16**

Cash Ending Balance - December 31, 2004

Checking Account	1,008.27
Savings Account	1,065.85

Cash Ending Balance **\$2,074.12**

R. W. Eckweiler

Bob Eckweiler, AF6C
Audit Committee

K. Dankerk

Kristin Dankerk, K6PEQ
Audit Committee

C. Pelquin

Cheryl Pelquin, KG6KKT
Incoming Treasurer

R. Buss

Bob Buss, KD6BWH
Outgoing Treasurer

A signed copy of this audit report is
on file with the incoming Treasurer.

[*Minutes, from page 6*]

10' tower sections and a barrel of guys, tower top plates and stakes.

A new storage location is needed before he moves. Kenan, N6CCE, will see if he can store these items in a storage facility he has.

A new Field Day site is under investigation. Willie, N8WP, will look into using the Los Alamitos Reserve base. Also, Kenyan will see if any property on the old Tustin Marine base is available. Other sites mentioned are Eisenhower Park in Orange and possibly some school property.

We need to find a club member with a pickup that can help bring equipment to Field day.

Rotating RF Editor:

Kenan, N6CCE, is publishing the

January 2005 RF; Kristin, K6PEQ,, will publish in February; Ken, W6HHC, in March; and Willie, N8WP, will publish the April (fools) edition of RF. More volunteers are requested.

Meeting Programs:

Willie, N8WP, reported that he is working to arrange for Charlie of Hi Q Antennas to speak at the February meeting. He is also looking into programs on PSK-31 and APRS. Bob, AF6C, suggested a 'movie night' where we show a ham related movie (perhaps 'Frequency'.) Ken asked Willie to check with the Red Cross to be sure we are confirmed for our meeting nights for the new year.

The club is looking for a member with access to a video projector for use at meetings.

Miscellaneous:

Bob, AF6C, to send ARRL publicity audio file to local radio stations for possible airing.

Ken, W6HHC, asked Steve, N1AB, to register with the ARRL to obtain lists of new amateurs in the North Orange County area.

Ken, W6HHC, asked Rich, KE6WWK, to update the OCARC club data on the ARRL web site. The listing in World Radio needs to be updated too.

The meeting was adjourned at 9:48 AM.

Respectfully submitted by,
Bob AF6C,
Acting Secretary

ORANGE COUNTY AMATEUR RADIO CLUB, INC
P.O. BOX 3454
TUSTIN, CA 92781-3454

First Class Mail

***Time Dated Material.
Please Expedite!!***