



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLII NO. 1

P.O. BOX 3454, TUSTIN, CA 92861-3454

JANUARY 2001

The Prez Sez:

Happy New Year

Where have you heard that before this year? Here is truly wishing a happy and prosperous year for us one and all. And to start our year we have a new slate of officers that I wish to thank for their devotion to our club. New officers are: Vice President, Cory KE6WIU; Secretary, Bob AF6C; Treasurer Ken W6HHC, Activities, Tom WA6PFA; Membership, Dick W6RWY; Publicity, Chris KJ6ZH; Technical, Lowell KQ6JD; Member at large, Larry K6LDC and Bob KD6XO.

The board members last year opened the door for flexibility in holding a board meeting. The tradition has been to hold it on the first Saturday of any month at 08:00 "Sharp". A few may even have been there once when even I made it that early, Hi Hi.

Starting this year we will pole the people at normal monthly meetings to see if a Board Meeting should be scheduled for the following new month. Chances are that we will keep up with the first Saturday morning breakfast/board meeting but that will be confirmed on a monthly basis. We may meet at other times at other locations to be determined. As always you all are invited to attend.

On January the 6th the board did meet at the *IHOP* Restaurant in

Santa Ana with an excellent turnout of people. Our outgoing Treasurer Bob AF6C had his books along and the financial statements and reports were in order so he offered them to the Audit Chairman, Chris W6KFW for inspection. Chris asked for volunteers from the breakfast to partake in the Audit. Bob KD6XO and I did stay and we inspected everything along with Chris. When it was all over we took a vote. . . (oops that was last November that the voting thing happened wasn't it) well we had a huddle and agreed unanimously that "Perfect is close enough"!

All that is left is to get the signature cards updated and our new treasurer will be ready to get swamped on the next meeting with the bestowing of the new dues for 2001. By the way, I bet those of you who send your dues to the Post Office box will earn extra credit with him. Did I hear him say "Keep those cards and letters coming?"

Our club is looking for a new RF Editor. Our thanks go to Bud WA6VPP for keeping our RF looking great for all of these last many issues. How many issues did you do Bud? As we move into an Email RF an editor will have a lot of fun collecting the information and presenting an RF that will be instantly available from any PC anywhere.

73, de kd6bwh Bob
kd6bwh@aol.com

January's Program:

Cory, our new Vice President, has been busy since the board meeting lining up programs for the upcoming year. If you have any ideas, or a program that you'd like to see, please contact her. Here's what's on for the next meeting:

To a real Radio Ham, a tall tower with an impressive antenna array and numerous peripheral antennas is a really beautiful site! Unfortunately, that beauty is not always shared among family, neighbors or homeowner association members. When that is the case, you want an antenna that doesn't attract attention, but will still let you enjoy your hobby.

At the January meeting, **Allan Avnet, AB8AA**, will present a program on **Stealth Antennas**. You may remember that Al presented a program to us on PSK-32 some months back that received many good comments!

You don't want to miss our **next meeting** to be held on:

Friday, Jan 19th @ 8PM

Reminder:

2001 Dues are Due!

You must renew before April Fool's Day to remain a member in good standing.

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



2001 Board of Directors:

President:

Bob Buss, KD6BWH
(714) 534-2995
kd6bwh@aol.com

Vice President:

Cory Terando, KE6WIU
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Treasurer:

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Bob Tegel, KD6XO
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2001 Club Appointments:

W6ZE Trustee:

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Club Historian:

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RF Editor (Acting):

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WEB Master:

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ARRL Liaison:

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ARRL Awards Appointees:

Larry Belin, K6VDP
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Art Dillon, KE6WOX
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OCCARO Delegate:

Bob Buss, KD6BWH
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Monthly Events:

General Meeting:

Third Friday of the month
at 7:30 PM
American Red Cross
(near Tustin Ave & 4th St)
Santa Ana, CA

Club Breakfast:

First Saturday of the
month at 8:00 AM
IHOP
1001 E. 17th Street
(west of Lincoln)
Santa Ana, CA

Club Nets (W6ZE):

Wednesday Evenings
28.375± MHz SSB
7:30 PM - 8:30 PM
Bob, AF6C, Net Control
146.55 MHz Simplex FM
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 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.
There is a \$1 charge for mailing new
badges.

OCARC Financial Statement for Year 2000

<u>Class</u>	<u>Sub Class</u>	<u>Income</u>	<u>Expense</u>	<u>Profit/ (Loss)</u>
Membership	2000 Dues	\$785.00		\$785.00
	2001 Dues	70.00		70.00
	Club Badges	57.00	\$39.52	17.48
Donations	NGO Trust Fund	450.00		450.00
	Heels & Wheels	500.00		500.00
Meeting	Raffle	517.00	643.39	(126.39)
	Refreshments	105.30	94.06	11.24
Events	Field Day	146.38	531.38	(385.00)
	Auction	386.50	245.70	140.80
	Breakfast	0.73		0.73
A.R.R.L.	Membership	208.00	197.00	11.00
Web Page	Operation		35.00	(35.00)
Associations	WR & 10-10		75.00	(75.00)
Board	Misc. Expenses**		123.49	(123.49)
Operations	Expenses*		376.00	(376.00)
Capital	New Generator		1,216.93	(1,216.93)
Newsletter	Postage		198.00	(198.00)
	Printing/Labels		210.54	(210.54)
Totals:		\$3,225.91	\$3,986.01	(\$760.10)

Balance Statement:

Beginning Balance:	\$2,355.54
Income:	\$3,225.91
Expenses:	<u>(\$3,986.01)</u>
Ending Balance:	\$1,595.44

***Operations Expenses:**

Post Office Box:	\$44.00
Trailer Registration:	\$3.00
Liability Insurance:	<u>\$329.00</u>
Total Ops Expenses:	\$376.00

Checkbook Balance:

On 01/01/2000:	\$2,441.97
Checks Outstanding:	<u>(\$86.43)</u>
	\$2,355.54
On 12/31/2000	\$1,595.44
Checks Outstanding:	<u>\$0.00</u>
	\$1,595.44

****Board Misc. Expenses:**

Receipt Book:	\$6.45
Check Printing:	\$11.50
Certificates & Plaques:	\$26.00
Flowers, Gifts:	<u>\$79.54</u>
Total Board Expenses:	\$123.49

de AF6C

Auditor 1: Christopher H Winter, W6KFW

Auditor 2: Robert A Buss, KD6BWH

Auditor 3: Robert Tegel, KD6X0

Treasurer: Bob Eckweiler, AF6C

(Fully signed original is on file with current treasurer)

Tech Talk

by Bob, AF6C

Decibels (Part One): The Logarithm

Decibels are commonly used in the field of radio. They are used to indicate signal strength, antenna performance, gain and loss, and even power output. Microwave transmitters commonly used to transmit signals from point to point often have power ratings expressed in decibels instead of watts. How is your knowledge of decibels? This series of articles will help you gain a better understanding of what expressions like 40dB over S9 really means.

Decibels are logarithmic in nature, so in part-one lets look at the concept of logarithms and why they're important. We'll do this with as little math as possible, and use only simple math when needed. Occasionally there will be sidebars for those who enjoy math, but you won't need to understand them to proceed.

Many hams have junk boxes, and in the junk box they usually have an assortment of common carbon resistors. Resistors are used in almost every electronic circuit and come in numerous shapes and sizes. They also come in a very large number of values. Common 5% film and carbon resistors are available from 1 ohm to 22 Meg (22,000,000) ohms in over 170 standard values. Let's say we want to plot these standard resistor values along the bottom of a graph. If the distance between where we plot the one ohm point and the two ohm point is a just one-tenth of an inch, the length of the graph would have to be over 34 miles! That's impracticable, especially since there are six standard values that need to be plotted between the one and two ohm points. Also, the next to the last standard value (20 Meg) ohm would be over three miles from the last point.

The solution is to use a logarithmic scale. This scale is based on powers of ten. Look at the following numbers; they are powers of ten:

$$\begin{aligned} 10 &= 10 &= 10^1 \\ 10 \times 10 &= 100 &= 10^2 \\ 10 \times 10 \times 10 &= 1,000 &= 10^3 \\ 10 \times 10 \times 10 \times 10 &= 10,000 &= 10^4 \\ \text{(Etc.)} && \end{aligned}$$

In each case tens are multiplied together a different number of times to get the value shown. The expression on the right is a different way to express that value; the number in the superscript is just the number of tens used and is referred to as the

exponent. Ten with an exponent of zero (10^0) is less intuitive. By definition it is one.

$$10^0 = 1$$

Not only can exact powers of ten be expressed in this manner. All the numbers in between them can also be expressed using decimal exponents. For example:

$$\begin{aligned} 5 &= 10^{0.7} \\ 20 &= 10^{1.3} \\ 200 &= 10^{2.3} \\ 5000 &= 10^{3.7} \end{aligned}$$

Don't worry about calculating these exponents. It is difficult, and is the reason books containing "Tables of Logarithms" used to be common. Today the simple scientific calculator has replaced the tables.

Numbers between zero and one can also be expressed by using negative exponents. Now we're dividing by ten instead of multiplying:

$$\begin{aligned} 0.1 &= 1/10 = 10^{-1} \\ 0.01 &= 1/10 \times 1/10 = 10^{-2} \end{aligned}$$

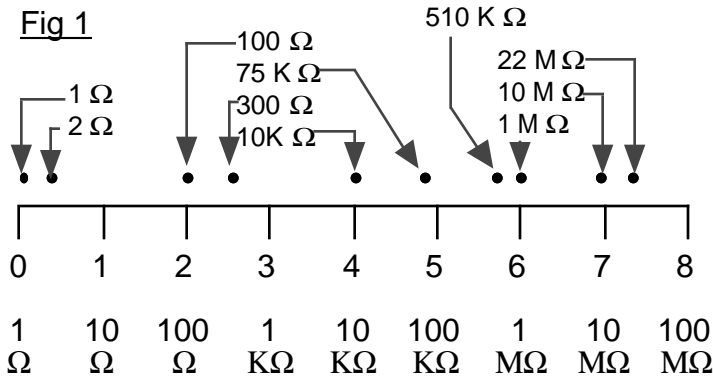
So what is a logarithm? It is just a way to express one number with another number based on the exponent of the power of ten. Why use logarithms? It allows you to express a large range of numbers with small numbers. To show this, let's go back to our example of plotting standard resistor values. Here are ten standard resistor values and their logarithms:

1 ohm	0
2 ohms	0.3
100 ohms	2.0
300 ohms	2.5
10,000 ohms	4.0
75,000 ohms	4.88
510,000 ohms	5.71
1 Meg ohms	6.0
10 Meg ohms	7.0
22 Meg ohms	7.34

Figure one shows the resistors plotted by logarithm and value. Usually only the value is given on plots, as in figure two. Since the values increase by multiples of ten on each large division of the plot, the plot can be distinguished as being logarithmic. Just about every *A.R.R.L. Handbook* since before 1944 has a reactance chart that uses logarithmic scales for the frequency and reactance axes. Look it over!

In the radio world receiver sensitivity is measured in

tenths of a microvolt and transmitter power in kilowatts and sometimes megawatts. With a large span like that you can bet that decibels are based on a logarithmic scale. We'll explore decibels further in the next **Tech Talk**.



Logarithms - some interesting facts:

- Logarithms can use base numbers other than ten. The mathematical value "e", (2.71828...) which has certain properties only a mathematician can enjoy, is a common base. Logarithms based on "e" are called natural logarithms.
- Negative numbers do not have logarithms.
- While very small numbers can be expressed easily with logarithms, zero cannot.
- Numbers can be multiplied together by adding their logarithms.
- Numbers can be divided by subtracting the logarithm of the denominator from the logarithm of the numerator.
- These last two principles are the basis of the slide rule.

**LOCAL SUMMARY
OF
QST FIELD DAY RESULTS**

By Ken W6HHC

Here is a summary of the ARRL 2000 Field Day results that were posted by local radio clubs in the December issue of QST. (Note: I was sorry to see that the ANAHEIM club was missing from this year's FD postings?)

CLASS 2A

CLAIREMONT REPEATER ASSN	W6VLD	2,004 QSOs	6,482 PTS	3 rd in CAL	31 in US
BISHOP ARC	N6OV	864 QSOs	3,250 PTS	8 th in CAL	132 in US
MORENO VALLEY ARA	W6IBR	515 QSOs	1,530 PTS	19 th in CAL	302 in US
FULLERTON RADIO CLUB	W6ULI	346 QSOs	1,192 PTS	26 th in CAL	352 in US

CLASS 3A

SOUTH ORANGE AR (SOAR)	K6SOA	1,771 QSOs	6,320 PTS	3 rd in CAL	35 in US
ORANGE COUNTY ARC (OCARC)	W6ZE	1,888 QSOs	4,990 PTS	5 th in CAL	57 in US
CORONA/NORCO ARC	W6PWT	1,307 QSOs	3,714 PTS	7 th in CAL	89 in US
WEST COAST ARC (WCARC)	W6WC	522 QSOs	1,948 PTS	14 th in CAL	174 in US

CLASS 4A

RIVERSIDE CTY ARS	W6TJ	1,761 QSOs	4,844 PTS	2 nd in CAL	23 in US
DOWNEY ARS	W6TOI	1,599 QSOs	4,330 PTS	3 rd in CAL	27 in US

CLASS 7A

WESTERN ARA (WARA)	N6ME	6,132 QSOs	18,702 PTS	1 st in CAL	1 st in US
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**Minutes of the January 2001
Board Meeting:**

The board meeting was held on Saturday, January 6th at *IHOP*, Santa Ana in conjunction with the monthly club breakfast. President - Bob, KD6BWH, called to order at 8:40 AM. Also in attendance were: VP - Cory, KE6WIU; Secretary - Bob, AF6C; Treasurer - Ken, W6HHC; Technical Advisor - Lowell, KQ6JD; MAL - Bob, KD6XO and MAL (and last year's president) - Larry, K6LDC. Absent were Membership - Dick, W6RWY; Activities - Tom, WA6PFA and Publicity - Chris, KJ6ZH.

Reports: The Treasurer reported that the year end balance is \$1595.44.

New Business: The yearly treasurer's audit was discussed and the decision was made to hold the audit right after the board meeting. Since Cindy and Don were not available, Bob, KD6BWH offered to sit in himself and appointed Bob, KD6XO to assist Chris, W6KFW, the audit chairman, with the audit.

A motion was made and passed unanimously to lock in the Field Day site in Garden Grove that we used last year. Ken, W6HHC is still trying to get us set up with the Los Alamitos Reserve base. Larry, K6LDC will see under what conditions our deposit can be refunded if our plans change.

The City of Orange has officially canceled out of the Baker to Vegas Race to be held on April 6th through 8th. Bob KD6BWH is looking for club members to support the Garden Grove race effort.

Bud, WA6VPP, is taking a year off as Editor of RF . The club is looking for a volunteer for this year's editor. Until a full-time editor can be found the club is looking for editors on a month-to-month basis. Bob, AF6C volunteered to edit the January issue.

Good of the Club: Bob KD6XO reports that the Heels & Wheels Carriage Club printed our thank you letter in their newsletter.

Adjournment was at 9:10 AM.

**Minutes of the December
General Meeting:**

The Christmas dinner replaced the December general meeting. It was held on December 17th at *Mimi's* in Fountain Valley. The attendance was good and comments of the attendees were favorable.

President Larry, K6LDC, presented Bud, WA6VPP, with the Good of the Club award for 2000.

Bob, KD6BWH, the new President, presented Larry, K6LDC, the outgoing president, with a plaque in recognition of his service.

Bob Tegel presented the club treasury with a check for \$500, This is a donation from the Heels & Wheels Carriage Club who will no longer be holding the Carriage Classic in this area. For many years our club supported them with communications at their yearly event.

Submitted by: Bob, AF6C,
Secretary

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First Class Mail

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