



RF

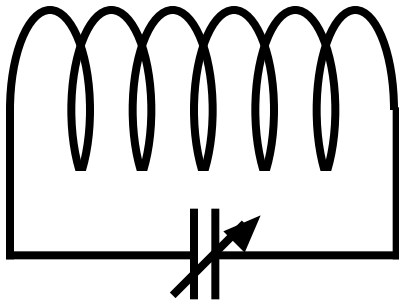
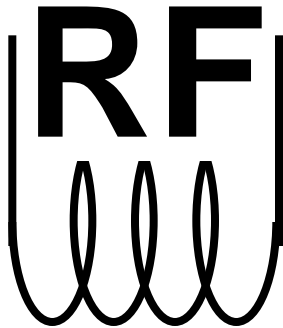


ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLII NO. 3

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

MARCH 2001



This symbol is a reproduction of the heading for the first issue of *RF* dated November 27, 1953. The original was hand drawn. Issues One and Two of Volume One of *RF* are now posted on our web site thanks to Bob – WB6IXN.

Articles Wanted for *RF*

Guidelines for Submitting an Article:

The *RF* is your paper. If you want to share information with the club whether technical, operational or just plain general interest, an article in *RF* is the way to do it. *RF* also needs some columnists. Does anyone want to volunteer as a DX columnist?

So you've decided to write an article for *RF*. Here are some guidelines to help you and the Editor get your article published with a minimum of effort.

Submit your article as a text file or *Word* document (.doc) file. Other formats can be hard to convert; check with the editor first. Graphics should be submitted as either GIF (.gif) or JPEG (.jpg) files. Also acceptable, but not preferred, are BMP (.bmp) and TIFF (.tif) files; they can be quite large and time consuming to send and receive. Do not include pictures in *Word* document files. Attach them separately as it makes the editing task much easier. Here are more guidelines:

- If you are sending a *Word* document use one of the following fonts: Times, New Century Schoolbook or

Continued on page 6

Last Club Dues Reminder:

2001 Renewal Deadline IS:

March 31, 2001

You must renew before April Fool's Day to remain a member in good standing. Pay Ken, W6HHC the Treasurer at the meeting or breakfast, or send your dues to the Post Office box. An application should be filled out; one is included on page 7, or you can fill one out inter-actively on our web site.

March's Program:

Our Guest speaker for March will be Les Allen – KM6SQ, Les will be speaking on the CONDOR 220 MHz Backbone. The CONDOR Connection is a series of repeaters that are linked and provide long range communications. How does this all work? How large is the coverage? Well, you'll just have to wait for the meeting for Les to answer these questions and more.

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

Friday, Mar 16th
@ 7:30 PM

In This Issue: Page

"RF" ARTICLE GUIDELINE.....	1
MARCH'S PROGRAM	1
CLUB INFORMATION	2
VIRTUAL QSL CARDS	3
SANTIAGO PEAK (Photo).....	3
VIEW SPACE STATIONS	3
TECH TALK: Decibels Pt. III	4
W6ZE.ORG (Tops 8,000 Hits)..	5
A.R.R.L. S.W.D. NEWS.....	5
QUIZ ANSWERS (Tech Talk)....	6
MARCH BOARD MINUTES.....	6
HAM COFFEE MUGS.....	6
MEMBERSHIP APPLICATION.	7
FEB MEETING MINUTES.....	8

Reminder:

April 7th 2001
Next Club Breakfast

**THE ORANGE COUNTY
AMATEUR RADIO CLUB,
INC.**

P.O. Box 3454, Tustin, CA 92781



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(714) 534-2995
kd6bwh@aol.com

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 (Listen for 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 up to \$30 per family.

There is a \$1 charge if you'd like to have your badge mailed to you.

Virtual QSL (VQSL) Cards Send QSL Cards By E-Mail

by: Ken Konechy - W6HHC

- 1) The VQSL.NET WEB SITE helps you send Virtual QSL cards by e-mail. The service is free. It helps avoid the high cost of international mail for snail-mail QSL cards.
- 2) VQSL.NET WEB SITE allows you to create electronic QSL cards easily, even if you don't have an optical scanner, or digital camera, etc.
- 3) VQSL.NET WEB SITE also acts as a virtual-QSL clearing house. If you don't know the e-mail address of your QSO-contact, then your QSO-contact can pick up his QSL card (that you sent) when he signs on to the VQSL.NET site.

4) A summary of features offered by VQSL.NET are:

- Create & Send High Quality QSL Cards POSTAGE FREE.
- Submit Pictures For Personalized Cards.
- Online DX Chat Rooms designed for making radio contact.
- Free Web Hosting.
- Free Email Account.
- Look up DX Contact Email Addresses.
- CQ Contests - Win NICE Prizes (the contest for March will be a new 2 meter hand held radio).

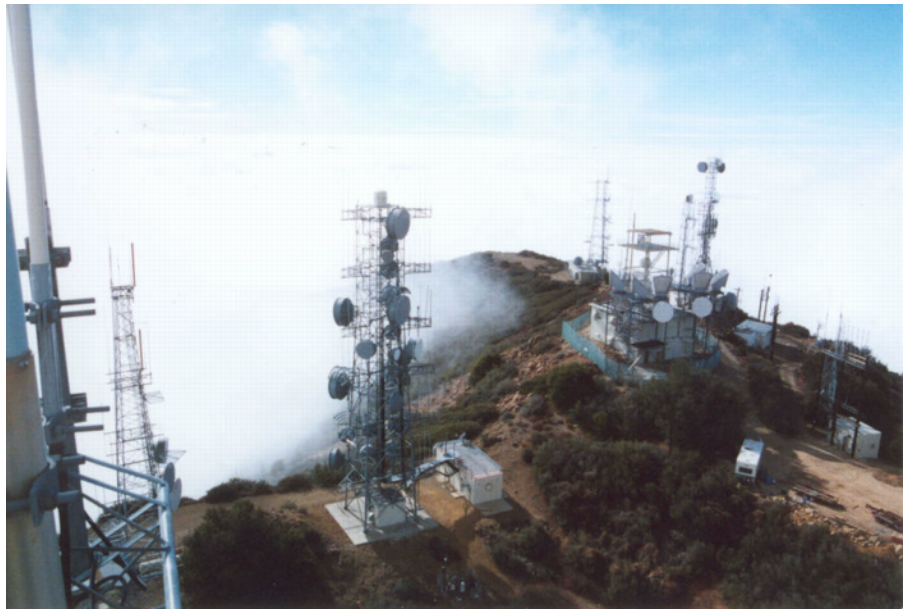
5) Only drawback is that VQSL cards may not be recognized as valid for some organizations (DXCC, etc.)

6) Visit the WEB SITE at:

<http://vqsl.net>

If you have any questions please contact Michael Paris KA9TND directly at:

ka9tnd@vqsl.net



A partial view of **Santiago Peak** on a cloudy day – home of many ham and commercial repeaters . Elevation is 5,687 ft. Photo by KD6NOT

VIEW THE INTERNATIONAL SPACE STATION & MIR

Bob Evans – WB6IXN has once again supplied us with dates and times to look to the skies for the International Space Station and MIR. Look for MIR quickly, because it's scheduled to crash to earth later this month. Both objects are bright and can easily be seen. The last time I viewed the ISS it was about as bright as Venus! Remember, these times are true only if the orbits haven't changed since calculated (and they may with a supply rocket heading for the ISS.) Check the web site a few hours before the scheduled pass if you want to be more accurate. Otherwise, the time may be off a few minutes. Here is the web site to check for the next pass:

<http://liftoff.msfc.nasa.gov/RealTime/JPass/>

<u>Object</u>	<u>Date</u>	<u>Rise Time</u>	<u>Set Time</u>
Int. Space Station	3/09/2001	6:16 am	6:26 am
Int. Space Station	3/10	5:14 am	5:23 am
Int. Space Station	3/11	5:46 am	5:56 am
Int. Space Station	3/12	4:46 am	4:52 am
MIR	3/13	5:48 pm	5:56 pm
MIR	3/14	5:36 pm	5:45 pm
Int. Space Station	3/16	3:38 am	3:48 am
Int. Space Station	3/27	5:58 am	6:08 am
Int. Space Station	3/28	5:28 am	5:38 am
Int. Space Station	3/30	5:45 am	5:55 am
Int. Space Station	4/01	5:04 am	5:13 am
Int. Space Station	4/04	7:35 pm	7:45 pm
Int. Space Station	4/06	6:49 pm	6:59 pm
Int. Space Station	4/08	6:03 pm	6:13 pm

Tech Talk

by Bob, AF6C

Decibels (Part Three):

Last month you hopefully got an understanding of decibels and how they allow you to express ratios of power (and voltage and current when you follow the rules!) This month you're going to get some practical techniques so you can estimate dB conversions right in your head. Problems like those that follow can be answered within reasonable approximation with no calculator needed!

"How many dB gain is an amplifier that has an input of one watt and an output of 400 watts?" or:

"A microwave transmitter has a specified power output of 37 dBm. How many watts is that?" or:

"You have a 150 foot run of RG-8 that you are feeding with your 100 watt transceiver. How much power reaches the antenna when you're on the 10 meter net? (Assume RG-8 has a loss of 3.3dB per 100 feet at an SWR of 1.5:1.)"

In the first part of this series we talked about powers of ten. You know that every 10 dB represents a ratio of 10 times the power (or one-tenth the power if it is a loss). The following are all referenced to 1 watt (dBw):

+30 dBw = 1,000 watts
+20 dBw = 100 watts
+10 dBw = 10 watts
+0 dBw = 1 watt
-10 dBw = 0.1 watt
-20 dBw = 10 mW
-30 dBw = 1 mW = 0dBm

Now that's easy! But what happens when numbers other than multiples of tens are used? Here's one to memorize:

+3dB = twice the power and inversely -3dB = one half the power.

This simple piece of information can often get us close. Remember that adding dB is the same as multiplying power. Therefore:

6dB = 3 dB + 3 dB = twice times twice, or 4 times the power.

9dB = 3 dB + 3 dB + 3dB or eight times the power.

In a similar manner, other values can be quickly calculated by remembering that subtracting dB is the same as dividing power:

4dB = 10dB - 6dB or 10 / 4 times, or 2.5 times the power.

7dB = 10dB - 3dB or 10 / 2 times, or 5 times the power.

With a bit more difficulty of calculation:

5dB = 9dB - 4 dB or 8 / 2.5 times or 3.2 times the power.

8dB = 4dB + 4dB = 2.5 x 2.5 or 6.3 times the power.

2dB = 7dB - 5 dB = 5 / 3.2 or 1.6 times the power.

Finally, you can calculate 1 dB, but it's just as easy to remember it as 1.25 (or more accurately 1.26 times) the power.

The Table 1 lists these approximate values along with their more accurate calculated value. Our answers are pretty close!

Now let's solve the problems at the beginning of this article:

One watt in and 400 watts out is a gain of 400. 20dB is a gain of 100. Three dB more would double the 100 watts to 200 watts and another 3 dB would give us 400 watts. $20 + 3 + 3 = 26\text{dB}$. If you calculate it out using the formula you get 26.02 dB. Our answer is quite close!

A microwave transmitter has an output of +37 dBm, which is 37dB greater than one milliwatt. Thirty dB represents one thousand times, so 30 dB is 1,000 milliwatts or 1 watt and 40 dB is 10 watts. Since the value is 3 dB less than 10 watts it is half of ten watts or 5 watts. (1 milliwatt + 30 dB + 10 dB - 3 dB, or 1 milliwatt x 1,000 x 10 / 2 or 5 watts). That wasn't hard!

Finally, since your antenna feed line is 150' the loss is 3.3 dB times 1.5 or 4.95 dB. We'll round it to 5 dB. From the table we know 5 dB is 3.2 times. Since it is a loss, we must divide. $100/3.2$ is about 31, so only 31 watts is reaching the antenna. If you don't have the table handy remember that a 6 dB loss leaves you with one quarter of the power or 25 watts. Five dB is one dB less or 25 watts x 1.25 or 31 watts! The calculated answer is 31.26 watts. It's wizardry!

Table One:

dB	Calc'd Value	Approx.	
		Gain	Loss
1	1.2589	1.26	0.8
2	1.5849	1.6	0.6
3	1.9952	2.0	0.5
4	2.5118	2.5	0.4
5	3.1622	3.2	0.32
6	3.9811	4.0	0.25
7	5.0118	5.0	0.2
8	6.3095	6.3	0.16
9	7.9432	8.0	0.12
10	10.0000	10.0	0.1

Here are four problems for you to work out. Three of the four are multiple choice. Write your answers in the boxes supplied. You'll know if your answers are correct!

1. Two thousand watts output is how many dBm?

- (a) 63 dBm
- (b) 33 dBm
- (c) zero dBm
- (d) 1000 dBm
- (e) 220 volts
- (f) none of the above

2. Your feed line has a small loss of just 1 dB. How much of the 125 watt transmitter output power is lost in the feed line?

- (a) 1 watt
- (b) 1.25 watts
- (c) 99 watts
- (d) 50 watts
- (e) 156 watts
- (f) 25 watts

3. Your highly accurate in-line wattmeter measures 20 watts when placed between the output connector of your 70 CM rig and the feed line. When moved to the other end of the feed line, so it is in line between the feed line and the antenna, it reads 5 watts. Write the feedline loss in dB in box 3.

4. John's new VHF "brick" amplifier produces 60 watts of output when excited with his 3 watt handheld. What is the gain in dB of the "brick"? What is 60 watts in dBw?

- (a) 20 dB and 38 dBw
- (b) 43 dB and about 13 dBw
- (c) 13 dB and a bit under 18 dBw
- (d) 13 dB and about 38 dBw
- (e) 20 dB and just over 18 dBw
- (f) 43 dB and about 13 dBw

Put your answers in the boxes provided:

1	2	3	4

Answers appear on page 6

By now you should have a good feel for converting between dB and power ratios. You might want to copy Table One and keep it handy in your shack.

In an earlier part of this series I mentioned the S-meter. Only on the most expensive commercial grade communications receivers does the S-meter read the actual signal voltage. On ham equipment the S-meter can only give relative signal strength readings. In the fifties some manufacturers claimed an

S-9 reading represented a specific received signal strength, though the value varied from company to company. A commonly heard reference was that each S-unit increase represented twice the signal strength (voltage) which relates to four times the power. (i.e. 6 dB). How good is your S-meter? You can find out by building a step attenuator. In next month's Tech Talk we're going to look at attenuators and some of the things they can be used for.

OCARC WEB SITE TOPS 8,000 VISITORS!!

Ken W6HHC, Web Master for the <http://www.w6ze.org> OCARC WEB SITE reports that the number of visitors has reached over 8,000 by the 1st of March. The visitor counter was first installed in May 1998. Visitors include over 100 different countries, including Czech Republic, Greece, Latvia, Russia, South Africa, India, Thailand, GI's stationed around the world, and universities from all over the world.

Date	Visitor Counter	Monthly Hits
01-Mar 2001	8075 visitors	(315)
01-Feb 2001	7760 visitors	(320)
01-Jan 2001	7440 visitors	(210)
01-Dec 2000	7230 visitors	(175)
01-Nov 2000	7055 visitors	(225)
01-Oct 2000	6830 visitors	(225)
01-Sep 2000	6605 visitors	(235)
01-Aug 2000	6370 visitors	(290)
01-Jul 2000	6080 visitors	(195)
01-Jun 2000	5865 visitors	(245)
01-May 2000	5620 visitors	(260)
01-Apr 2000	5360 visitors	(240)
01-Mar 2000	5120 visitors	(265)
01-Feb 2000	4855 visitors	(215)
01-Jan 2000	4640 visitors	(255)
01-Dec 1999	4385 visitors	(230)
01-Nov 1999	4155 visitors	(140)
01-Oct 1999	3915 visitors	(190)
01-Sep 1999	3725 visitors	(245)
01-Aug 1999	3480 visitors	(355)
01-Jul 1999	3125 visitors	(380)
01-Jun 1999	2745 visitors	(280)
01-May 1999	2465 visitors	(275)

Table continued...

Date	Visitor Counter	Monthly Hits
01-Apr 1999	2190 visitors	(300)
01-Mar 1999	1890 visitors	(255)
01-Feb 1999	1625 visitors	(200)
01-Jan 1999	1425 visitors	(---)

A.R.R.L. NEWS - A Request from Our SWD Director Fried Heyn WA6WZO

1) Please help get the word out that June 30 is the deadline for obtaining [ARRL] membership at the old rates. In addition to the discount for two or three years, there is a newly announced special five-year membership rate of \$146 (\$122 for seniors, 65+). Remember, members have only till July 1st to lock in 5 more years at these reduced rates.

2) Also, please promote the upcoming 2001 **Southwestern Division Convention**, September 7-9 at the **Riverside Convention Center**. The Inland Empire Council of Amateur Radio Organizations is once again putting on the show. If you remember, the IECARO did a great job in 1997 shortly after they first formed. For more information, including an application form that can be copied, see their Web site:

<http://www.qsl.net/arrl-2001swdc>

3) This year I have been appointed to the Volunteer Resources Committee (in addition to being reelected to the Executive Committee). The VRC has been tasked with studying the Field Organization which is managed by section managers who are elected volunteers just like your director/vice director. For more information on the FO, see the SWD Web site:

<http://www.qsl.net/arrlsw>

For a lot more details look at the ARRL FO site:

<http://www.arrl.org/FandES/field/org>

Please let me know of any concerns or suggestions club members have to help us with this VRC study of the FO.

Minutes of the Board Meeting March 3rd, 2001

The board meeting was called to order at 8:51 AM after a fine breakfast attended by 12 club members and Aaron - KG6EJP, a guest of Lowell. All board members were present except Chris - KJ6ZH, Bob - KD6XO and Cory - KE6WIU, who had to leave early.

Old Business:

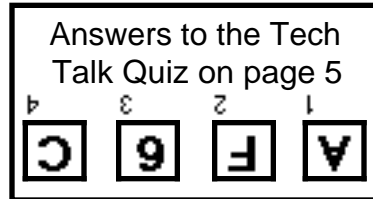
- Bob - AF6C reminded the club that a guest sign-up sheet is not being passed around at the meetings. The membership chairman reported he now has the sheets and they will be available.
- RF distribution was discussed. About 20 copies are being mailed. Tom - PFA asked to be taken off the mailing list. He will receive his RF via e-mail.
- Ken - HHC reported on Field Day. The meeting with Santa Ana on Portola park is to be held on March 20th at 10:00 AM. Contact Ken if you'd like to attend.
- A long discussion on the Baker-to-Vegas race support followed. Bob - BWH passed around a sign-up sheet. The next planning meeting will be held on Wednesday March 21st. See last month's Prez Sez for details. The race will be held April 7th and 8th.
- Bob - BWH reported on OCCARO. There is some interest in a club sponsored pizza bash. CLARA reminded the organizations that it has its bi-monthly pizza meetings and we could all attend them. OCCARO is looking for people to participate in its "Antennas in the Park" event. Location will be Tricity Park.

New Business:

- Bob - AF6C is looking for a QSL card printer who can print up club cards. If you have any source in mind contact him at af6c@arrl.net
- Tom - PFA is looking for someone to handle refreshments for the meeting. Cindy - OPI and family volunteered.
- Lowell - JD made a motion to purchase a mobile radio and 'mag' antenna at a cost of up to \$250 to raffle off.

Tickets will be sold until profit exceeds 15%. Motion passed 3-2. Tom - PFA recommended the prize be changed to a \$250 HRO gift certificate. The new motion passed 6-0. This purchase requires a club vote.

(Continued on Page 8)



RF Article Guidelines

(Continued from page 1)

Helvetica. Use Courier when a monospaced font is required. Skip the fancy fonts unless they are totally necessary. If they are, list the font(s) used. The PDF program used to publish RF is limited to specific fonts; other fonts must be on the publishing system and converted to a bit image font. The text in RF uses New Century Schoolbook for the serif font and Helvetica for the sans serif font.

**Have fun writing!
Don't worry if you accidentally break a few of these guidelines...**

- Format tables with tabs (a single tab between columns.) Don't mix spaces with tabs, they just have to be removed.

- Format only as necessary to get across information. Chances are the editor will have to reformat to fit column dimensions, available space, etc.

- Put carriage returns only at the end of a paragraph. Don't put them at the end of each line in a paragraph; instead, turn text wrap on. The article will probably be fully justified when published, and those carriage returns removed; removing carriage returns is a pain!

- Don't put two spaces at the beginning of each sentence. That was OK on an old typewriter but not a computer. It's like feeding oats to your car! All decent word processing programs handle that automatically. Consider it unnecessary formatting.

- Use a spell checker. Read your article over a few times. Check and double-check call signs and other information that the Editor may not have information on.

- Have fun writing! Don't worry if you accidentally break a few of these guidelines when writing your article; the Editor will correct them. The guideline is just to make his job, and your job easier.

- Submit your article on disk or by email (Use the editor's email address listed on page 2 of a recent RF). Short written or typed articles are also acceptable; they should be avoided when possible since they must be retyped.

Call Letter Coffee Mugs

Lowell - KQ6JD has come up with a source for coffee mugs with your call and name **deeply etched** into the side. The mugs come in cobalt blue and black colors. The price is \$12 each with some of that going to the club treasury. Contact Lowell for more information.



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

02/03/2001

2001 Application For Membership

ocarc_app_2001a

New Member Renewal DATE: _____

Name: _____ Call: _____

License Class: Novice Tech. Tech Plus General Advanced Extra
(Circle one)

Address: _____

City: _____ State: _____ Zip Code: _____

Phone: _____ OK to Publish Phone in Roster? Yes No

E-Mail Address: _____

Are You an A.R.R.L. Member? Yes No Badge Name: _____

Dues: Full Member: (\$20.00/Yr.)* \$ _____

 First Family Member: (\$10.00/Yr.)** \$ _____

 Club Badge: (\$3.00 each) Qty: _____ \$ _____

 ARRL Dues or Renewal: (Optional)*** \$ _____ (Attach Application)

Total Amount Paid: \$ _____

How do you prefer to receive the *RF* Newsletter? Off our Web Site U.S. Mail

Family Members:

#1 Name: _____ Call: _____ Class: _____ Badge Name: _____

#2 Name: _____ Call: _____ Class: _____ Badge Name: _____

#3 Name: _____ Call: _____ Class: _____ Badge Name: _____

#4 Name: _____ Call: _____ Class: _____ Badge Name: _____

How did you hear about our club?: _____

* New member dues only are pro-rated quarterly from January First.
** Family members must reside at the same address. Only one *RF* will be mailed per family. \$30 maximum dues per year per family.
*** A.R.R.L. Membership can be renewed for your convenience.

<p>Processed: Treasurer: _____ Membership: _____ (Do not Write in this Box)</p>
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**Minutes of the February 2001
General Meeting:**

The February 2001 meeting was held Friday, Feb 16th @ 7:30 PM. Gus Bogard, WM6J was the guest speaker. He talked on his experiences as an Official Observer and recent improvement in FCC enforcement. The program was well received by our members and guests. Meeting attendance was 17 souls.

A short business meeting was held after the break. All board members were present except Tom - WA6PFA, Chris - KJ6ZH and Cory - KE6WIU (who had to leave early.)

The February Board minutes were accepted as published.

Treasurer's report: Our January income was \$445.13, and expenses were \$139.31. The current balance is \$1,901.26

Lowell - KQ6JD announced a proposal to hold a social function with the Long Beach ARC. It will probably be held in Garden Grove, or some other central location. The membership

showed interest. Bob - AF6C suggested a similar get together for all the OCCARO clubs, sponsored by the OCARC.

The club discussed raffling an ADI radio. Club to sell tickets until a minimum of 15% profit is shown. The club voted to go ahead with the raffle.

Cindy - K6OPI reported that we may be able to move back across the street to our old meeting room by the April meeting.

Ken - W6HHC reported that the City of Santa Ana is looking favorably at our club using Portola Park for Field Day. A Planning meeting with the City will be held on Tuesday March 20th at 1:30 PM at 833 W. Santa Ana Blvd. (Second floor conference room).

Submitted by: Bob - AF6C

**March Board Minutes
(Continued from Page 6)**

• Bob - BWH reported that the ham booth at the O.C. Fair is set. Our club will man the booth on the 1st Wednesday of the fair. Bob also advised that

OCCARO is looking for a \$50 donation from clubs to support the fair and other operations. A motion was made for the \$50 donation and passed un-animously.

Committee Reports:

Ken - HHC reported the treasury balance is currently \$1971.33. Bob - AF6C noted that that is a 0.92 dB increase since the beginning of the year!

Good of the Club:

• Ken - HHC reported that the ARRL dues are going up. There will be an ARRL convention in Riverside September 7th to 9th. And Fried has been appointed to the ARRL Volunteer Resource Committee (See page 6 of this month's RF for more details on these items.)

• Cindy - OPI mentioned that this month is American Red Cross month and suggested a letter of appreciation be sent to the local chapter for letting us use their facilities.

The meeting adjourned at 9:40 AM.

Submitted by Bob - AF6C

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

First Class Mail

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