



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLV NO. 3

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

MARCH 2004

THE PREZ SEZ:



With all the amount of planning that Field Day requires, it is a good thing to begin early. Perhaps one good thing

that comes from the thought it takes to put together a really fun weekend is that we may just get some ideas. Some of these ideas would be better than others, I know. I got to thinking about increasing the number of people and how that could be done. It was then that I had one of these ideas.

I started to investigate my idea by checking around other radio club sites to see what they do about the food being served. In the past OCARC allocated some money to purchase the food, and the people who were assigned the task to buy and serve the food did a terrific job, but they were obviously limited to what they can buy. I would like to see it I may change this.

One club I ran across served steak, eggs to order, cheesecake, cobbler and ice cream, chili, hamburgers and hot dogs, among other tasty fair. I am cheap enough to question whether or not I would be willing to pony up the \$20 that they were asking from each Field Day participant, but if the club provided its funding (was it \$250 last year?)

See: **Prez Sez** on page 7

JOE CLEMENT W6MR SK

Joe Clement, W6MR [ex-KF6OG] died of injuries from an automobile accident while returning from Phoenix two weeks ago. Joe's wife Lois, W6MRS, and another passenger survived the accident and are hospitalized. The extent of their injuries is unknown, but Lois reportedly has been moved out of intensive care. (She's home now - Ed.)

Joe is a former leader of COAR, the *City of Orange Amateur Radio*. He gave up that position when his work required him to be out of town frequently. Lois continued to be active in COAR. Joe was also an avid race car enthusiast, involved with *Clement Racing*. Joe is known to many of the OCARC members who participate in COAR.

The cause of the accident is still under investigation.

Our thoughts and prayers are with Lois and Joe's family.

Contact Lowell, KQ6JD for the latest information.

FINAL REMINDER:

The March Mtg. is the last chance to pay your dues!

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 can't say that!) Please pay Bob, KD6BWH at a meeting or breakfast, or mail your dues to our P.O. Box.

MARCH PROGRAM:

"Murphy Lives in West Africa - The C5Z Story"

ARRL Southwestern Division Director Art Goddard, W6XD, will talk about a DX-pedition to West Africa. The crew continually encountered Murphy on this operation. Learn how they were able to overcome his mischievous ways! Art always puts on a top-notch presentation. He'll possibly have some of the latest ARRL news too. You won't want to miss the upcoming meeting!

The next regular meeting will be:

**Friday, Mar 19th 2004
@ 7:00 PM**

We will be meeting on the 2nd floor in the east bldg.

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**Next Club Breakfast & Open Board Meeting
April 3rd 2004**

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

P.O. Box 3454, Tustin, CA 92781



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Monthly Events:

General Meeting:

Third Friday of the Month
At 7:00PM
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
2601S. Harbor Blvd.
(just south of Warner)
Santa Ana, CA

Club Nets (Listen for W6ZE):

7.115 MHz CW **OCWN**
Sun - 9:00 AM - 10:00 AM
Rick KF6UEB, Net Cntl.

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 much more.

Club Dues:

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

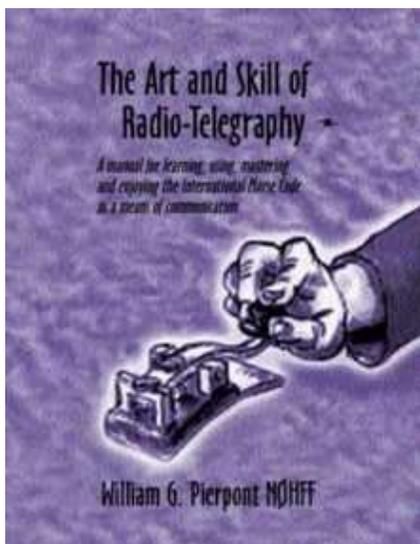
Dues run from January thru December & are prorated for new members.

*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.

CW BOOK AVAILABLE:

The Art and Skill of Radio Telegraphy by William G. Pierpont, NØHFF, is available for purchase (Fourth Edition) or for free download (Third Edition).



CW operators and others interested in CW may enjoy reading this 240+ page book. The Internet download is under a megabyte, but if you'd prefer a real book, you may purchase one for about \$12 plus shipping. For more information go to:

<http://www.qsl.net/n9bor/n0hff.htm>

Thank Steve, KG1BZ for this find!

NPR FEATURE SPOTLIGHTS ADDITION OF @ SYMBOL TO MORSE CODE:

Some hams may have thought they'd left their transceivers turned on Tuesday, February 17. That's when the popular National Public Radio afternoon news magazine *All Things Considered* ran a piece about the pending addition of the @ symbol to the official international Morse code lexicon. That's because NPR introduced and closed the nearly four-minute segment with actual CW, catching the ear of many hams.

ARRL Chief Technology Officer Paul Rinaldo, W4RI, [proposed the two-

See: **NPR Morse** on page 8

MY NOVICE DAYS – Part II:

by: Bob AF6C

In part I, you may recall, I had finally received my novice license, dated July 1, 1959, but was just leaving with the family on vacation. The next few weeks were spent on Cape Cod, but often my mind wasn't as much on the beach as on finally making my first contact. That didn't happen until early August. I was spending most of my summer vacation days at a camp riding horses. On July 30th I put my first signal on the air using a 7.192 MHz crystal. It was immediately obvious that my antenna was not cut properly. Most of the next three days were spent adjusting the length of the antenna for a reasonable SWR.

On August 2nd, showing a decent SWR on 40 meters, I telephoned my classmate's father for a quick signal report. With W2CJY on phone and me on CW, I had my first QSO; it lasted only a minute. Almost two hours after that I got the courage to try my first CQ. Disappointment, no answer. An hour later I sat down at the key and tried again. This time I answered a station calling CQ, and he came back on my first call. The station was WV2EMF, Bob in Bayside N.Y. a mere 5 miles away; but it was as great as any DX. That contact I consider my first real QSO, and it lasted 12 minutes. Over the next several weeks I had logged 15 QSOs, with Michigan (KN8MRS) being my farthest contact.

So far I had operated only on the one frequency. I also had crystals for 7.046 and 7.077 MHz that were out of the 40 meter novice band but tripled to 21.138 and 21.231 MHz, in the 15 meter novice band. I tried a few CQs in the late evenings on 15 meters, but the band always appeared dead. Giving up on 15 meters, I took some of my hard earned allowance and went to Arrow Electronics and bought a second crystal for 40 met-

ers. Now I could QSY to 7.158 MHz! I added numerous new contacts to my log on 40 meters using that crystal.

As October came around I tried 15 meters again, this time in the early afternoon. In just a few days I had TN, MN, NJ, PA, and TX logged. Unfortunately, my two 15 meter crystals seemed to be on very popular frequencies so I again made the trip to Arrow Electronics and picked up a third crystal for 15 meters. 7.064 (21.192) MHz. When you bought a crystal you didn't specify a frequency; you just selected one from a bunch that the store happened to have. There were different brands of crystals at different prices. Peterson Radio, Crystek and Texas Crystal were the common brands. These crystals came in war surplus FT-243 holders, see Figure 1. I returned home a bit poorer but with a new crystal for 15 meters.



FT243 Style Crystal used by most popular Novice rigs in the late '50's and early 60's. **Figure 1**

By early November the only real 'ham' friends I had were people I knew from school. Then one night I had a contact with WV2DYK, Jeff in neighboring Great Neck, Long Island. We chatted on CW for about 20 minutes. When Jeff

See: **Novice Days** on page 5

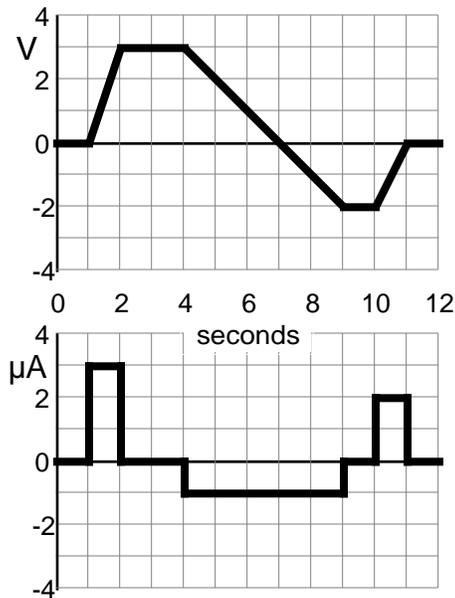
Bob's Tech Talk #27:
by: Bob, AF6C

Capacitors - Part II

Last month we looked at the basic concept of a capacitor, how it stores energy in an electric field and various ways one can be constructed. This month we'll look at some uses for capacitors. but first we must learn the relationship between the voltage across a capacitor and the current flowing through it. As we learned last month, even though a capacitor has no direct path between its leads, it still can carry a current. That relationship is shown by the following equation:

$$i = C \frac{dv}{dt}$$

This is what mathematicians call a differential equation. Luckily, you won't need to solve it, you'll just need to understand what it means, and that is not hard. In plain English, this equation says that *the current flowing through a capacitor is equal to the capacitance times the rate at which the voltage across the capacitor is changing with respect to time.* If the voltage is changing fast then the current is high. But if the voltage is changing slowly then the



A varying voltage across a 1µf capacitor (top) and the resulting current through the capacitor

FIGURE 1

current is low. And, of course if the voltage isn't changing at all, then the current is zero.

Look at figure 1. The top graph shows the voltage across a 1 µf capacitor over a 12 second period. The lower graph shows the current flowing through the capacitor:

- For the first second the voltage is zero, but more importantly it is not changing, thus the current is zero.
- For the next second the voltage increases linearly at three volts per second, thus the current is 3 µA.
- Over the next two seconds the voltage remains constant at three volts and the current through the capacitor is again zero.
- Over the next five seconds the voltage is changing at minus one volt per second from plus three volts to minus two volts, and the current through the capacitor is -1 µA.
- For the next second the voltage is increasing by two volts per second and the current is 2 µA.
- Finally, for the twelfth second the voltage is again constant and the current is zero.

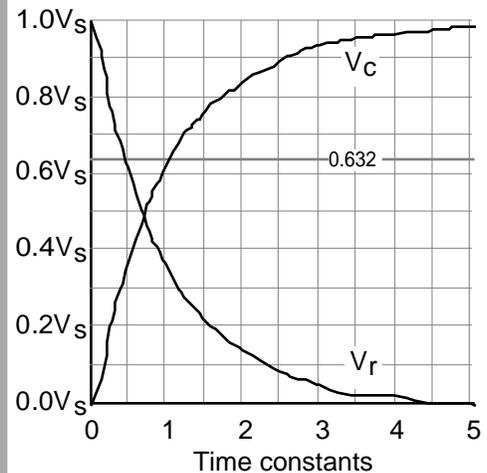
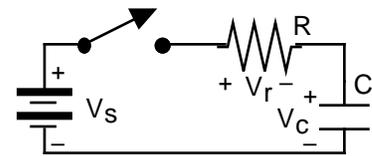
The important thing to remember here is that the current depends only on *the rate at which the voltage is changing* and not on the actual voltage itself.

Figure 2 shows a capacitor in series with a resistor. Assume that the capacitor is initially discharged. When the switch is thrown, current flows through the resistor charging the capacitor. The voltage across the capacitor increases exponentially until it is equal to the voltage of the battery, at which time no more current flows. For those who are interested, the voltage across the capacitor is given by the equation:

$$V_C = V_S \left(1 - e^{\left(\frac{-t}{RC} \right)} \right)$$

To some this may seem a complex equation, but all we need to know from it is that when $t=0$ then $V_C = 0$ because $e^0 = 1$, and when $t = RC$ then $V_C = 0.632V_S$. RC is called one time constant and is the time it takes a capacitor to charge to 63.2%. After five time constants a capacitor is charged to greater than 99% and is considered fully charged. The voltage across the resistor and capacitor add to V_S , the battery voltage.

Discharge of a capacitor is also exponential. The circuit is shown in figure 3. Assume that the capacitor is initially charged to V_S . When the switch is closed, the capacitor starts to discharge through the resistor. After one RC time constant the voltage will have dropped to 0.368 of the original voltage. After 5 RC time constants the voltage will have dropped below 1% of the original voltage and be considered fully discharged. Note that in the figure 3, V_r is equal to V_C and follows the same curve as V_r in the graph of figure 2.

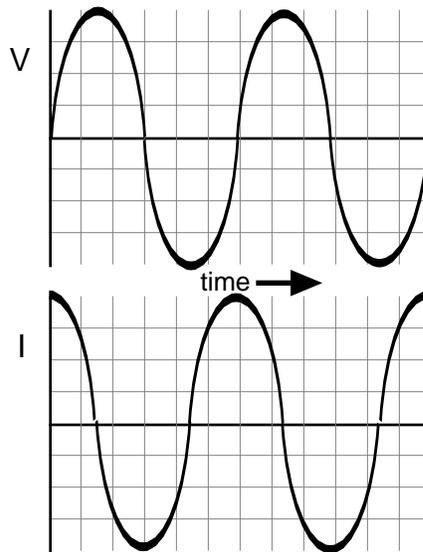


Charging a capacitor. Voltages V_C is across the capacitor and V_r is across the resistor. $V_S = V_C + V_r$ **FIGURE 2**

The charging and discharging a capacitor to a steady-state or DC condition represents a transient condition. Another condition, called a periodic condition occurs when a capacitor is subject to a periodic voltage or current. Periodic means that the voltage or current signal repeats over time. The time it takes to repeat is called the period and relates to frequency and wavelength. The sine wave is the most simple periodic wave.

Let's apply an AC sine wave voltage across a capacitor and see what happens to the current flowing through it. Figure 4 is similar to figure 1, except the applied voltage is a sine wave. The lower graph shows the resulting current through the capacitor. Notice that where the sine wave voltage is at a peak, its rate of change is momentarily zero, and the current is zero. Also, the points where the voltage crosses zero is where it is changing the fastest and the current is at a peak. The voltage and current are out of phase by 90° and the current is leading the voltage.

Remember back to Ohm's law? The current in a resistor depends upon the resistance and voltage. In a capacitor the current is determined not by the voltage but by the capacitance and the rate at which the voltage is changing. For a sine wave, this rate is more commonly called the sine wave's frequency. Thus a capacitor has a characteristic similar to resistance for AC voltage. That characteristic is called *reactance*. We've all learned the formula for reactance of a capacitor as



Sine wave voltage across a capacitor (top) and the resulting current through the capacitor (bottom)

FIGURE 4

part of our ham test. It is:

$$X_c = \frac{1}{2\pi fC}$$

Note that as the capacitance gets larger or the frequency gets higher the reactance gets smaller. There are two things to note about capacitance. First, unlike a resistor, *an ideal capacitor doesn't dissipate any energy*. Second a *capacitor creates a phase shift* between the voltage and the current.

Next month we're going to explore the phase shift and get an understanding of power factor in AC circuits as well as in electrolytic capacitors.

To review recent issues of the **Tech Talk** column go to our website at:

<http://www.w6ze.org>

de AF6C

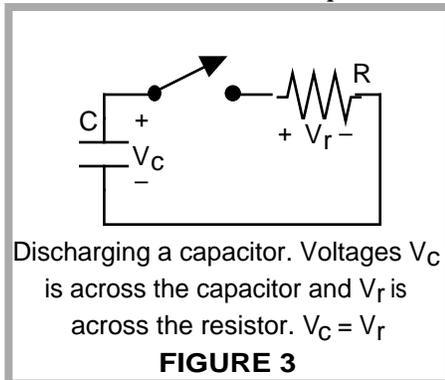


FIGURE 3

Novice Days from page 3.

signed, WV2DLR, Bob in East Williston, L.I. called me. That QSO lasted only 15 minutes, but was followed by many more over the next two weeks, including a two-and-a-half hour CW marathon. Sometimes Jeff joined in. There were also some landline chats and then one day I rode my bike the 7 miles to Bob's home and we had our first eyeball QSO. Meeting Jeff was another adventure; his family owned an 18 foot motorboat. Jeff took Bob and me out for a cruise on Long Island Sound, watching the planes land and depart from LaGuardia Airport and traveling under the beginnings of the Throggs Neck bridge that was still over a year away from opening. Until we all left for different colleges four years later, we stayed good friends. Jeff later became an Eastern Airlines pilot, and Bob now has an accounting firm. I still talk to them on occasion. Jeff sports a new 1x2 call, but Bob still holds his WA2DLR call.



Peterson Radio Crystal in the Z9 Sealed Holder. These crystals were usually custom ground and more expensive than the ones in the war-surplus FT243 holders.

Before I had met Bob and Jeff, they had made the trip to the New York City Federal Building and had passed their General Class license test. Their year as a Novice had nearly ended and mine was just beginning. By late November both

had received their licenses; the 'V' in their calls had changed to an 'A'. Often, they came down to the Novice band and we worked CW. Occasionally, we would work cross mode, them in the general portion of the band on AM and me on CW in the novice band. These QSO's turned into an almost daily 15 meter roundtable that lasted for years. Besides Bob and Jeff; Marty, K2MDL; Bill, K5CEL/2 (aka. K2AIR - Mitchell Air Force Base), George, W2QKR; Ira, WA2OAX and many others were regulars on these informal gatherings.

My code speed was slowly improving. Ten WPM was easy, but a reliable 13 was still a challenge. Besides the local rag chewing, I was working on my Worked All States award and occasionally working DX. Still, there were many times I wasn't able to get on the air at all for days on end. I was a freshman in high school, and ham radio took a back door to schoolwork. I was taking first year French and it required vast amounts of memorization and studying, and I was having trouble.

On April 22nd, 1960 one of my friends was going into New York City to take his General test, and I was invited to go along. I didn't think I was ready yet, but I wanted to give it a try anyway. The code test was a disaster for both of us. The trip was something I'll never forget. The Federal Building was on Washington St. west of Greenwich Village in lower Manhattan. The building was old, and after trudging up seven flights of stairs and traveling down a dim corridor we arrived at the door. It was a wooden door below an open transom, with frosted glass marked "Federal Communications Commission" in gold lettering – a door you'd expect to see on a detective agency in a 30's movie. Upon entering the room, I remember only the old wood floors and old wooden school type benches with built-in writing surfaces (designed by and

for right-handers.) The only thing different from an old school room was that on each bench was a pair of earphones and a telegraph key. At the front of the room was a code machine, possibly a McElroy "Instruct-O-Graph". I assume we filled out a form 610 before the code test began; it was a scary moment for a young boy. When the results of the code test came back, we were invited to try again in a month. The disappointment was so high that we headed straight home instead of walking the mile-and-a-half south to Cortlandt street, home of numerous radio and electronic surplus stores. We had planned to go there after the test to celebrate.

I had done better in French than in radio. (But not much better!) That day I set my goal to take the test again in a month and pass it. I worked hard on my French but even harder on the code. I searched out stations that were sending faster, and found that if they were interesting I would forget the speed and enjoy the conversation. A month passed but school exams were coming so I wasn't allowed to try again until June 24th.

That day I was driven into Jamaica, L.I. and took the subway from there into the city (Even in 1960 parking in the NYC was a challenge.) On this trip the old building was not so intimidating, nor were the chairs so harsh. The code test seemed easier, though my heart was in my mouth the whole time. This time I was among those who passed, and I let out a momentary sigh of relief. Relief that quickly vanished as the examiner worked his way among those of us still seated, handing a card and asking us to send on the key while he listened on our headphones. The first person passed, the second failed; I was third. Following a few quick deep breaths, I took the card which had the text printed on it, and started to send on the old hand key; it felt like I sent for a

long time. Then suddenly there was a mistake. Eight dits were sent, then the correction, and I continued on. A few seconds later the examiner put down the earphones, said "Enough!" and continued to the next person. Had I passed? I wasn't sure, but then I hadn't been invited to "come back again next month" as had the person before me. I sat there while he tested the remainder of the group. The written tests were passed out next. When I was handed one I realized the code test was behind me. I felt confident that I could pass the theory; but in 1960, if you failed the theory test then you had to retake the code test again the next time. An hour or so later I turned in the written test and patiently waited for the results. Success! I was now a general class! Well almost – the license wasn't valid until it was received in the mail.

That afternoon, after arriving back home, I fired up the radio and worked a W5. One week later, on June 30th I made my last novice contact; Jim, K2AKK had that honor. My novice license expired that midnight and I couldn't operate anymore until the new one arrived in the mail. On July 13th, just three weeks after passing, it did. That was a record; my novice license had taken over 6 weeks to be processed. I was on the air again, and I finally had full amateur privileges.

Looking back on almost 45 years as a licensed ham, that first novice year was the best. CW was a challenge, but it was a fun way to communicate and the only way to advance in amateur radio. Many friends, who remain friends today, were made, and a career in electronics was introduced.

What was my second favorite adventure in radio? It's hard to say, but my first OCARC Field Day is definitely up near the top!

de Bob, AF6C

Board Meeting Minutes

March 6, 2004

President Steve Brody, KB1GZ, called the meeting to order at 8:30 AM.

New Business:

Bob Eckweiler AF6C brought up the fact that the club needs to make sure all the officer information is up to date with the ARRL, World Radio and the State of California. Bob AF6C volunteered to update the ARRL. The club Secretary will send an update to World Radio to include the phone number of the new President. After discussion it was decided that the club secretary would send a letter to the State Franchise Tax Board updating information. Also decided was that the Secretary and Treasurer will check yearly with the State to make sure the club information is correct. This will be done in the month of March.

Old Business:

Ken Konechy W6HHC, our Vice President, is going to check with the City of Santa Ana to make sure the request to have field day activities in the same place as last year is being processed. Larry Hoffman K6LDC reported the field day chairperson process is still going forth. President Steve suggested that several members could serve as chairpersons of different responsibilities. Bob AF6C volunteered to assist with band distribution. Discussion was held and it was held that the club will be responsible for dinner Saturday and Breakfast Sunday. These meals could be a joint effort of individuals bringing food items to prepare and the club providing some food items.

Bob, AF6C, would like articles for the RF from the members.

Lowell Burnett, KQ6JD, [who will be absent from FD] informed the board that he has the club flags and coffee pot. President Steve will

obtain these items from Lowell.

Treasurer Bob Buss, KD6BWH, reported there is \$2,450.44 in the club accounts. A discussion was held regarding the bank fees the club is paying. Bob will check to see if he can get the fees waived for the club accounts. At this time there are 25 members paid.

A discussion was held regarding the order of activities on general meeting nights. It was agreed that there was no set order as it is more important for all of the topics to be covered. It was suggested that the Secretary call the names of all active committee chairpersons so that an update can be given at each meeting.

Good of the Club:

Larry K6LDC suggested that now is the time for the Vice President to make inquiries regarding a place for the Christmas party.

It was discussed that it is important for members and guests to be greeted at each meeting and especially important that guests be introduced at club meetings.

It was brought up that the doors at the Red Cross building seem to be locking at 6:45 PM instead of the understood time of 7:15 PM. Vice President Ken will inquire at the Red Cross as to what is going on.

Adjourned at 9:23 AM

Respectfully submitted
Rich Helmick, KE6WWK
Secretary

Prez Sez from page 1.
and the Field Day participants were to contribute another \$10, maybe we can eat and drink well over the weekend.

Anyway, this may not be a great idea, but what do you think? Are you willing to make a contribution?

OK, this is one idea, how about someone else having another idea?

73, Steve, KB1GZ

General Meeting Minutes:

February 20, 2004

Meeting began with the *Pledge of Allegiance*. Following that our resident antenna expert Ken Konechy, W6HHC, presented an interesting program on software for Antenna Modeling. Following the program President Steve Brody, KB1GZ, reminded the members that dues are due at this time. The minutes of the last meeting were approved as published in the RF. Treasurer Bob Buss, KD6BWH, Reported that the club has \$2,445.82 in the accounts. President Steve announced that the Baker to Vegas run is coming up and if anyone wanted to volunteer to assist, there are many spots that can still be filled. Also Orange County RACES is having a "Christmas in April" event the same time as Baker to Vegas. If you would like to participate in that, your participation would be greatly appreciated as many of the County's HAMS will be at the Baker to Vegas run.

Vice President Ken informed the group that a direction finding training was going to be held soon. Anyone who is interested can check:

<http://www.homingin.com>

Larry K6LDC informed the group that GPS and ankle bracelets are combining to locate Alzheimer's patients.

There was no old business. New Business – President Steve entertained a motion to send a donation of \$50.00 to the OCCARO group. After discussion a motion was made by Larry K6LDC to donate \$20.00 to OCCARO. The motion was seconded by Vice President Ken and passed on a voice vote.

President Steve asked for a volunteer to be the Field Day chairperson. After some discussion, a nominating committee whose

See: General Meeting on page 8

NPR Morse from page 3

character stream, many felt was needed, as a new character, necessary for transmitting e-mail addresses in CW, among other possible purposes. Assuming approval by ITU member-states, the new character – the first added to the code in many, many years – will be 'AC' run together [•--•--•].

The new character, Rinaldo says, is both unique in the Morse world as well as a mnemonic (think of an 'a' wrapped in a 'C'). ATC co-host Robert Siegel interviewed ARRL Senior News Editor Rick Lindquist, N1RL, for some background on the change, giving Lindquist an opportunity to mention his passion for mobile CW operation. The short feature, "Morse Code Enters Cyber Age," is available on the National Public Radio Web site:

<http://www.npr.org/rundowns/segment.php?wfId=1680529>

From: *The ARRL Letter* 2/20/04 as corrected in the 2/27/04 issue.

General Meeting from page 7

members are Cindy, KC6OPI, Matt, K6LNK and Larry, K6LDC was formed and charged with getting a list for possible Field Day chairpersons ready for the next general meeting.

President Steve reported he would like more activities for the club; this could include a T-hunt and mini DX on a weekend. He will also get information on Antenna in the Park activities in April. Cindy, KC6OPI, suggested setting up a station at the Discovery Science Center in Santa Ana for a club activity.

Old friend and member Lloyd Harwood, WB6ULU, was present and reintroduced to the group. Bob Buss indicated that there were 23 members who had paid dues so far this year.

Cindy, KC6OPI, reported that her daughter April, KG6CJI, had graduated from Ft. Jackson, NC and is now at Ft. Lee. April would like letters from the members. (Those of

you who have been to one or both of these fine Army bases probably have information to give to April).

Vice President Ken has added a program on Logbooks of the World to the growing list of programs. HAM Bill Schultz will give his program on Cuba at the Anaheim PD EOC on Tuesday at 7 PM.

Meeting was closed on a motion from Vice Present Ken.

Respectfully Submitted,
Rich Helmick, KE6WWK,
Secretary



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