



The PROPAGATOR

May, 2004

The Monthly Newsletter of South Orange Amateur Radio Association

Spring Auction	T-hunt News	Hospital Service Group
<p>Spring is clearly here, and it is time to do some cleaning. Dig through that pile of old parts, equipment and projects, and bring what you can bear to part with to SOARA's auction. Don't worry about a sense of loss at parting with that wonderful junk, er.. I mean wonderful equipment. You will find many other treasures available.</p> <p>The auction is cunningly planned so that you load up your vehicle with equipment to take to the auction while it is still light out. This is so your wife can see all that "stuff" leaving. When you return from the auction it is dark, and you can sneak your new acquisitions into the garage under the cover of darkness. We all recognize the requirement to keep our wives happy. Maybe the above is a little over the edge, but I needed to make the point that keeping one's wife happy is important. Our outstanding auctioneer is not going to be available at this auction. Monday, May 17, is his wedding anniversary, and . . . Well, I think you understand.</p> <p>Heiko, AD6OI, who generally helps Malcolm with the auction will team up with another member to conduct the auction. Come out and see how they do. Also plan on buying some gear, because seriously, the range of parts and equipment has been improving and some very good rigs have traded hands at recent auctions.</p> <p>The activities start at 7:00 PM, May 17. Arrive early to tag and set-up your treasures. The room will be open by 6:30 so that we can get started on time and still get out by 9:00PM. □</p>	<p>Another successful T-Hunt was conducted on Sunday, May 2nd. With participation from 8 SOARA members, the May hunt lasted about 3 hours. Team A members were Dale, W8RRV, Karl, KF6MDF, and Tom, W5LON. Team B members were Joe, W6BGR, and his son Bronson(age 9). Team C members were Richard, K6RBS, and Dave, KG6QCI.</p> <p>The transmitter was hidden by Steve, KG6OYK, and Brian, NJ6N, near a park in Laguna Niguel. The terrain and a convenient chain-link fence surrounding the area combined with a higher output power (2 Watts as compared to previous hunts 500mW) made for some interesting propagation of the signal. The hidden transmitter could not be heard to the north and was barely discernible in Laguna Beach near the repeater site.</p> <p>After an hour and forty-five minutes of hunting in the hot sun, teams B & C closed in on the transmitter, unaware they were being observed from above by the nefarious KG6OYK & NJ6N. After fifteen minutes of searching for the transmitter, Joe, W6BGR from team B spotted it and claimed victory for this month's hunt! Second to find the T was Richard, K6RBS from team C and third was Karl, KF6MDF, from team A.</p> <p>After the hunt, the hungry participants joined other SOARA members for a BBQ at NJ6N's house. Come join us next month for another fun and exciting T-hunt. The hunt starts at 1:00 PM on Sunday, June 6. There is no particular place to start. Coordination is on the 445.660 repeater, and the hidden transmitter will be located on 146.565 MHz with a distinctive multi-tone modulation and Morse code ID. Simple equipment will suffice to get started. Next month's T will be hidden by Joe, W6BGR. □</p>	<p>Certainly one of, if not the, most efficient and best organized emergency communications service groups in Orange County is the one started and coordinated by last month's speaker. April Moell, WA6OPS, honored SOARA with a presentation on the history and status of the Hospital Disaster Support Communications System (HDSCS).</p> <p>April has a background in patient care and is a former hospital department head. Combining her understanding of the needs of hospitals and her interest in amateur radio she has built an emergency support group which has gained national recognition. Several SOARA members are active in HDSCS. Anyone interested in learning more about the activities of the group can visit the group's web site: www.hdscs.org, talk to any of the SOARA members in the group, or contact April via e-mail at wafops@hdscs.org</p> <p>SOARA supports local RACES and ARES emergency groups through the use of our repeaters. We also encourage all members who can to become affiliated and active in one of the local emergency communications groups. Emergency communications is an important part of amateur radio. □</p>
<h2 data-bbox="207 1675 462 1717">New Members</h2> <p data-bbox="110 1745 490 1797">A hearty welcome to SOARA's newest member:</p> <p data-bbox="203 1829 483 1856">Tony Sanchez KC6OIN</p>		<h2 data-bbox="1263 1549 1339 1585">BPL</h2> <p data-bbox="1073 1591 1528 1871">A visit to the SOARA web site will lead you to a wealth of information on BPL (broadband internet access through power lines). There are two links at the top of the web page. The first takes you to the ARRL site. The second to a Q&A type presentation which does an excellent job of explaining the potential for interference to amateur radio. Last month Ray, AE6H, passed out info on writing to your representatives on BPL. □</p>



The Way I See It: Understanding Radio Theory Without Math.

I had intended to use this month's column to discuss BPL which strikes me as a very bad move on the part of the FCC. After checking out the BPL links on the SOARA web site, that seemed a bit superfluous. The material available is very good and quite complete.

Thinking back about 50 years brings us to another decision handed down by the FCC which proved to be quite wrong. The technical standards for color television are 50 years old. It was on December 17, 1953, that the FCC voted to accept what is known as the NTSC color standard.

In 1951 the FCC adopted the CBS sequential color system. The CBS system used a large rotating disk with color filters in front of the receivers monochrome picture tube. Picture tubes were not all that large back then. It was a system which was not difficult to implement and to adjust. You had to keep the receiver's color wheel synchronized with the one in front of the camera, and in 1950 when approval was received, CBS was ready to broadcast color. The greatest drawback was that virtually no receivers were in existence. On June 25 of 1951, CBS produced an hour long color broadcast featuring Ed Sullivan. It was a "really big show" but there were only about 20 sets capable of receiving it.

CBS did not have a division in the business of making TV sets. The system was not compatible with the monochrome standard, so viewers without the special CBS receivers could not watch the color casts in black and white.

RCA was working on a color system which was compatible with the monochrome standard, but it was not fully developed. In fact there was a great deal of development yet to be done. RCA argued to the FCC that they should wait for the development of a compatible system and even filed a suit to stop the approval of the CBS system. The courts ruled that the FCC had the authority to make the decision they had handed down.

RCA and NBC, the RCA owned network, were working to develop a compatible system. In October of 1951, color television production was suspended for the duration of the Korean war. RCA was able to continue the development of their system while production was on hold. Although color broadcasts had been authorized, with no base of color receivers the CBS system was essentially on hold.

RCA engineers faced many technical challenges in developing their system and there was not a lot of time. RCA put enormous resources into the effort.

Because of the nature of the human eye, it is only necessary to transmit three color images to combine them into what we perceive as a full color picture. The camera made use of three standard image orthicon tubes (these were the tubes used in cameras at that time). The image from the lens passed through a dichroic mirror which reflected the blue image into one tube. The light which was not reflected passed through to another dichroic mirror which reflected the red image into a second tube. The green image passing through that mirror struck the third tube. Thus the camera produced the three color images.

The requirement now was to send these three images to the distant home receivers simultaneously and in the same bandwidth as a monochrome picture. On top of these requirements was the requirement for computability, i.e., the current monochrome receivers must be able to make use of the signal.

Certainly the color picture can be described by the red, green, and blue images, but it could also be described by a different system. In this system it is described by an intensity (brightness), hue (color), and saturation (purity of the color, or how much white is mixed with it). One can change between these two descriptions, and in order to obtain the required compatibility, that is just what the RCA engineers chose to do.

The three color signals may be added to obtain the intensity signal. This is equivalent to the signal that would be sent in a monochrome picture, and, of course, just what the monochrome receivers expect.

The remaining problem is to send the color,

or chroma signal, within the same bandwidth as was being used by the intensity signal. It turns out that our vision is sharpest for intensity information, and color information does not need the full band width. In fact, the sharpness of perception in the orange — cyan hues is considerably greater than in the blue — yellow. The engineers saw that the chroma signal could be sent using much less bandwidth than required for the intensity signal.

If we look at the fine structure of the intensity video signal, we find that the energy is concentrated at multiples of the horizontal scan frequency. If the color signal is placed on a subcarrier at a frequency which will concentrate the energy in between the frequencies where the intensity signal resides, then it will be relatively invisible in the final picture.

By taking advantage of the characteristics of the eye, the RCA engineers managed to squeeze all of the color picture information into the existing monochrome channel. The goal of a compatible color picture was achieved. Of course, This short account is greatly simplified.

Producing an all electronic TV receiver was another challenge. Converting the received signal back to red, green and blue was difficult enough in mass produced sets, but many obstacles stood in the way of the color picture tube. One might consider that tube as a merging of three picture tubes. There are three electron guns. The screen is coated with not a continuous coat of phosphor, but an array of triads of red, green and blue phosphors. A metal mask ensures that each red dot can only be "seen" by the red gun, etc.

Despite the tremendous technical challenges, the RCA engineers built their system. When it was presented to the public, the FCC was compelled to rescind their previous approval of the CBS system and adopt this new system as the industry standard.

Will the FCC recognize that BPL is a mistake before a great deal of money and effort is sunk into the system? With some luck the ARRL and other HF users will show the same determination and perseverance that RCA did some 50 years ago. It is worth supporting the ARRL's efforts, and it is worth taking the time to write your representative. □

Year 2004	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
General Meeting 7:00 PM	26	23	15	19	17	21	19	16	20	18	15	No meeting
Program	WB6NOA	W6XD	K0OV	WA6OPS	Auction						Auction	
VEC Testing 5:30 PM	26	23	15	19	17	21	19	16	20	18	15	—
Propagator Deadline	18	15	7	11	9	13, 26	11	8	12	10	7	
Board Meeting	2/2	3/1	22	26	24	28	26	23	27	25	22	
ARRL Field Day						26/27						
SOARA picnic								2				
SOARA Holiday Party												7

ON THE AIR

Operating Tips by John Walker, AC7GK

Sometimes the thrill of competition and the chance to add multiple QSL cards to our collections during the operational phase of field day overshadow another vital aspect of all this fuss that was actually one of the original purposes of it all: identifying, setting up and using equipment in the field that could be used in an emergency operation.

It is a good chance for club leaders to refresh themselves on who has emergency generators, portable towers, special antennas, large tents, all-terrain vehicles and the like so these people can be called on when a disaster hits. As we set up and use our radios in the field, we are practicing how we could do the same thing under emergency conditions, such as when earthquakes make staying indoors impractical or even dangerous. As we dig out and actually use batteries, cables, antennas and power sources, we make sure that everything is operating correctly, that we know where everything is, and just what is still needed to bring ourselves up to operational readiness. Less-advanced hams can have the experience of operating in bands that are usually closed to them for greater communications potential.

Alternative modes such as packet, which has proven itself valuable for such things as shelter communications or welfare traffic, can be worked and perfected under emergency conditions.

From the first slingshot over the tree to set up a long wire, to the careful take-down and packing away afterward, we are doing what we might have to do if the large earthquake predicted for this summer actually materializes. In the past, clubs such as ours have been valuable resources in passing health and welfare traffic into and out of areas devastated by fire, flood or earthquake. This was proven in the Northridge quake where hundreds of such messages were handled by hams both here and in other states where concerned relatives needed word concerning their loved ones. There is a great thrill in actually helping people as skilled operators when other communications cannot get through.

The greatest thing one can do in life is to be of service to others, and hams are always poised and ready to provide valuable service to the world community, a serious thought to keep in mind throughout the fun of field day.

Planning for Field Day

The weather feels like summer (well, it always feels like summer here!) so it is time to be thinking about Field Day. Organizing this year's effort is Jim, K6VDH, who is busy making plans and seeking volunteers. There is plenty to do. We will have a planning meeting soon where many of the general details will be discussed and volunteers sought. Some time next month Heiko will hold his antenna party to make sure all of the antennas are complete and ready to assemble at the Field Day site.

Laptop computers will be needed for logging during the contest. The computers will need to have the logging software installed and configured for networking. Generators, storage batteries, chargers and rigs for the various stations are needed.

SOARA has been very fortunate in the past to achieve high scores and a very enjoyable time for all. We have failed to collect some of the special operation points, and this year we want to correct that.

Plan on being involved this year. It will be a great experience, and we will find our club with another top score.

Election Results: The ballots are in and SOARA is pleased to announce that the nominated officers were elected for the 2 year term.

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South Orange Amateur Radio Association
P.O. Box 2545
Mission Viejo, CA 92690



Meeting: May 17, 2004 at 7:00 PM Auction

☛ **SOARA** meets at the Mission Viejo Community Center, 26932 Veterans Way, Mission Viejo, the third Monday of every month at 7:00 PM. Changes to the meeting time or place are announced in this newsletter and on the 147.645 two-meter repeater.

☛ **License Exams:** Amateur License Exams are given prior to SOARA meetings. Exams are from 5:00 to 7:00 PM. Walk-in applicants are welcome. For information call Paul Levey, NZ1M, at 949-481-5454.

☛ **Contacting SOARA:** Questions about SOARA? Send e-mail to: info@soara.org, or leave a message at 949-249-1373.

☛ **Web Site:** SOARA maintains a web site with current club information. The URL is: <http://www.soara.org>.

☛ **Repeaters:** The SOARA 2-meter, 70 cm and 224.100 MHz repeaters are open to all licensed hams.

SOARA 2m — 147.645 – (110.9) Laguna Beach

SOARA 2m — 146.025 + (110.9) San Clemente

SOARA 2m — 145.240 – (110.9) Trabuco

SOARA 220 — 224.100 – (110.9) Laguna Beach

SOARA 440 — 445.660 – (110.9) Laguna Beach

The SOARA 220 and HROC 440 repeaters are shared by members of both clubs. Each machine is subject to the operating rules of its respective club. Call KG6GI for details.

SOARA 220 — 224.640 – (123.0) Santiago Pk. (C)

HROC 440 — 447.180 – (131.8) Santiago Pk. (C)

☛ **Nets:** SOARA 2 m repeater open net is held Tuesday 8:00 PM
40 meter HF net (7.268 MHz +/- for QRM), Sunday 7:30 AM.

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