

NOVEMBER 2000

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP

K6BJ Barbeque-Potluck at the Welty's December Meeting and Holiday Lunch

Wasn't it great? I know everybody who was there thought so. The weather was perfect. Our hosts, Jim KF6YRD and Norma, were most gracious and welcoming. Their home is a wonderful thing to behold, and everybody felt immediately comfortable there. The food was marvelous. The potluck contributions were amazing, all delicious and the variety was unbelievable. Master



Chef YRD barbecued the steak and chicken to perfection. Norma made sure everybody had all of what he or she might want, and more. And those deserts! Nobody left without a full stomach. The foxhunt was lots of fun. It turned out that Bruce AC6DN had half buried the fox transmitter up in the brushfield above the house. Mike W6YDG was the first to find it. About a dozen searchers eventually worked their way to the find.

The QRP operation was fascinating too, a hastily created field setup with the 20 meter



Jim Welty "Chef YRD" (3rd. from left.) next to the club Prez.

wire dipole draping through the tree branches, and Jeff AC6KW operating with his newly built Elecraft K1 transceiver. Best of all was the conversation and socializing that everybody enjoyed for several hours. Thanks to all 54 attendees for having made the event such a resounding success!

Remember our NEXT club meal, which promises to be another fun one, the 12:30PM Saturday December 9 brunch at the Chaminade!

— Cap



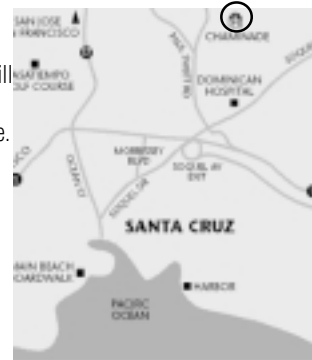
This year our December meeting/holiday lunch will be held/consumed at Chaminade in Santa Cruz. We have reserved a private room adjacent to the main dining room from 12:30 to 2:30 PM on Saturday December 9th - mark up your dance cards!

Chaminade provides two high quality buffet options, a full multi-course meal for \$15.95 and a lighter version comprising soup, salad, sandwich for \$11.95. You can make your individual selection. The Club will pay for the room and meals are at member expense. There is no need to make individual reservations and guests will be most welcome.

We would like to include some form of entertainment and any suggestions will be appreciated. Please contact a Board member and let's make this event one to remember.

— Ron, W6WO

Directions to the Chaminade, December 9 club meeting
At the stoplight on Soquel Drive, between Dominican Hospital and the Highway 1 overpass, is the intersection of Paul Sweet Road. Turn onto Paul Sweet Road and head toward the hills. A quarter mile later you will come upon Chaminade Lane. You won't miss it!



The November 17th meeting will be downstairs in the Main Dominican Building.

CLUB MEETING FRIDAY NOVEMBER 17, 7:30P.M.

SHORT SKIP

Published 12 times per year.
Free to members.
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Prez Sez

Thank you all who came to the barbecue at Jim, KF6YRD, and Norma's house on Saturday, November 4. We had over 50 attendees and everyone I spoke to said they were having a great time and deemed this event a resounding success. Jim did a great job of cooking the main course, and he and Norma both are to be commended for preparing their house and grounds to accommodate us. Thanks to Bruce, AC6DN, for providing us with a working fox for the fox hunt. We had an abundant variety of delicious and enticing side dishes and desserts brought by the participants, demonstrating what can happen when hams get their wives involved, hi!

— 73, KQ6DV

Board Minutes

SCCARC Board Minutes

A regular meeting of the board was called to order at 1830 hours PDT on Friday, October 20, 2000, at Dominican Hospital Education Center in Santa Cruz.

The president, Tom KQ6DV, was in the chair. Also present were the vice president Don KF6KGO; the secretary, Cap KE6AFE; the treasurer, Allen WB6RWU; and the members of the board, Bruce AC6DN, and Ron W6WO. Neither the minutes of the previous meeting, nor the treasurer's report were presented for acceptance.

The nominating committee is still looking for candidates for club officers and board members for the November club meeting election. At least one candidate has already been found for each position except treasurer and vice president.

A motion to allow Cap and Dan AA6GD to arrange to sell the old surplus gear

currently in storage in the old repeater shack was passed unanimously.

Discussion of arrangements for the club potluck-barbecue in November and the club December meeting/meal ensued. Bruce will organize a foxhunt at the November event and Tom will organize a QRP operating display there.

A motion to authorize an expenditure of not more than one hundred dollars for the purchase of food for the November potluck-barbecue was passed unanimously.

The board generally feels that a December meeting/meal should be held, as in the past, but that another year at the Holiday Inn would not be the favored plan. The bylaws state that the December meeting is when the newly elected club officers and board members begin their year's term of office. Ron will research other possible venues for the December meeting.

The meeting was adjourned at 1925 hours PDT.

NOVEMBER MEETING!!

1. The election of SCCARC Officers and Board members. Yes, Someone will attempt count the ballots in a timely manner. Could a run off election be needed? Cap will consult the club bylaws.
2. Eric Swartz, WA6HHQ, will be speaking about his company, Elecraft, which is located in Aptos and is currently the largest company in the world devoted exclusively to QRP kits.



NASA INTERNET PROTOCOLS

NASA demos Internet protocols for space: NASA recently demonstrated the ability to use standard Internet protocols to communicate with an orbiting spacecraft—as if it were just another node on the Internet. Working with the Operating Missions as Nodes on the Internet (OMNI) project, engineers at

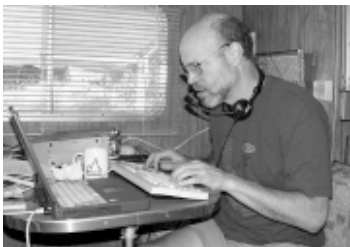
NASA's Goddard Space Flight Center have completed the first step in extending Internet access to future spacecraft. Astronaut Ron Parise, WA4SIR, is one of the driving forces in the project. GSFC engineers successfully used standard Internet PING packets to communicate with UoSAT-12, also known as UO-36,

through a ground station in Surrey, England. This marked the first time that a spacecraft ever had its own Internet address and was a fully compliant active node on the World Wide Web. More information is available at <http://www.spacedaily.com/news/internet-001.html>.—Joseph Fitzgerald via AMSAT News Service

ND6E CAL QSO PARTY

The ND6E team is back from our annual expedition to San Benito County. Another great time was had by all.

This year we decided to try a new site, one with electricity, and one that is easier to get to with an RV than Fremont Peak. Eric, K6EP, went on a search for a new site and came up with the Pinnacles Campground on the eastern side of the Pinnacles National Monument. The site was at a fairly low elevation and surrounded by mountains, but Eric measured their elevation to be about 6 degrees and that would be fine for US contacts.



Eric, K6EP



Tom, KG6AO

We began our journey on Friday morning. The plan was to meet on a 2 meter simplex frequency and caravan our RV's to the site. As with all good plans, it didn't go quite as expected. Ron and I called and called but couldn't find the other two RVer's. So we decided to go on ahead. As we passed the rest area on the way to Watsonville, I spied Tom's RV hiding behind a big truck. He was waiting for Eric to show up. Ron, K6EXT, and I decided to go on ahead since it was too late to stop at the rest stop.

Upon arriving at the campground we were a bit worried by the camp rules. There it was in the largest, boldest letters on the

sign: ABSOLUTELY NO RADIOS. We went ahead and found our site. Shortly afterwards Tom, KG6AO, arrived. A bit later Eric, K6EP, pulled in. Within a few hours, we all had our rigs set up and the towers and antennas mounted. Eric had his triband beam at about 35 feet. Tom had a 3 element monoband yagi also at about 35 feet. They had first rate stations with KW amplifiers and rotators. I set up my two element 20 meter yagi on 24 foot of green military mast. Below that I set up a 15/40 meter dipole. My rotator was a piece of rope tied to the boom. No laughing, it worked great. I only ran 100



Kamal, KA6MAL



Jeff, AC6KW & Ron, K6EXT

watts, but for a QRPer that is like a KW. When the park ranger came around, not only did he not enforce the "NO RADIOS" policy, but he thought it was kind of interesting.

Saturday morning, Kamal, KA6MAL, Arrived and set up a 40 Meter SSB station. We were pretty much set. We had Ron on 10 SSB, Eric on 15, 80, 160 SSB, Tom on 20 SSB, Kamal on 40 SSB, and Me, AC6KW, on 15, 20, 40 CW.

That morning we also had another visitor. A bobcat had found an interesting hole to watch on the far side of the site. I was able to get quite close to him to take his photo. He kept looking at me then at the hole and

trying to decide if I was enough of a threat to give up his breakfast.

The contest began and we all retreated to our stations. The site looked pretty much deserted most of the time. Without the annoying roar of generators blaring, all that could be heard was the quiet melodic sound of CW and the constant drone of



Bobcat

voices calling "CQ CA from ND6E" ;-)
There was the occasional break for hiking, and swimming in the pool, but most of the time was spent at the rigs. The dinner break was nice as we all got together for a group dinner. While having our dinner, we heard a loud scuffling behind Kamal's tent. A quick investigation led to the discovery of a heard of about 20 wild pigs rooting around the large oak tree that was supporting our wire antennas.

Morning brought the sweet smell of coffee. Kamal and I had a nice talk as we watched the deer grazing nearby. Then it was back to the rigs as we all pounded them out one by one.

The contest was lots of fun as was the camaraderie. It is fun to bring a rare county to life and be at the rig end of a pile-up. We all can't wait until next year to do it again.

—73 de AC6KW



ARES REPEATERS

The Santa Cruz County Office of Emergency Services furnishes three repeaters to ARES. The repeaters are operated by ARES. All repeaters require a PL of 94.8. The frequencies and locations are as follows:

K6RMW	147.015+	Watsonville
N6IYA	146.745-	Bonny Doon
N6ZOC	146.835-	Summit

Watsonville ARES Net meets each Thursday night 8:30PM on the K6BJ and KI6EH (linked) Repeaters at 146.79- / 147.945- Mhz.

The **Santa Cruz ARES** meets the second Tuesday each month at the Santa Cruz Red Cross on Soquel Avenue at 7:30PM. Net meets each Monday at 8:30PM on 146.836 - PL 94.8

TRADE or SELL TABLE at NOVEMBER MEETING

Bring your surplus radio gear to sell or trade. The table will be set up before the club meeting. Put a price on your goodie and have fun trading or selling: mics, connectors, handhelds and related equipment, receivers, transmitters, etc. Let's have fun!

—Dan AA6GD

BALUNS Again

At the October club meeting I gave a short talk on a couple of experimental baluns that were constructed for our field day 40/15 meter dipole. Some good questions were asked on current vs voltage baluns and power rating that I did not answer fully. Frankly I do not understand the current/voltage distinction, in fact I find vendor literature and even the ARRL handbook confusing on the topic.

To clear the air (or at least the air I breathe) recall that the job of a balun is to isolate a part of a system that is electrically balanced with respect to ground from a part that is unbalanced. Transformers are often useful for this task, also they provide impedance transformation if desired. Transformers couple energy by virtue of magnetic flux linkages between windings and often use a magnetic material to increase the degree of coupling. The amount of flux that a core can transfer and the power lost in it become limiting factors. As flux is proportional to current we might say that this form of balun is current limited and it could be where the term "Current Balun" comes from but I'm not sure.

We all know that transmission lines can provide impedance transformation but unlike a lumped constant transformer, energy is transferred by the propagation properties of the line and not via flux linkages or a core. Transmission lines can also isolate balanced from unbalanced parts of a system, a common application being a coax feed to a balanced antenna. At the junction of the feeder and the antenna energy travelling within the coax divides in part to the antenna and in part to the outer skin of the outer conductor. To transfer energy exclusively to the antenna we must increase the impedance of the coax shield to the point where external surface current is negligible. By winding the coax into a coil we increase the shield impedance to external current without greatly disturbing the transmission properties within the coax. This increased impedance "chokes" the flow of unbalanced current, in effect providing balanced to unbalanced isolation.

You might recall that I showed two baluns

Goodbye RST, Hello CS

Most contest and DX-pedition operators send 59 or 599 for all contacts, demonstrating clearly that RS and RST are dead letters. Why is that? RST is now 75 years old. When hams were moving from spark to CW, the 9-level Tone reports were useful for alerting amateurs about AC products in their signals caused by poorly-functioning homebrew power supplies. It was a 1920s solution to a 1920s problem. Although key clicks and chirps are occasionally aired, very rarely now do we hear CW stations transmitting with AC ripple in their tone. Let's begin by simply dropping the T. It no longer serves a useful purpose. Notice that when RST was applied to phone modes, the T was dropped and not replaced with similar quality measures, such as modulation percentage for AM and SSB, and deviation for FM.

C or Copiability Scale

X	=	no discernible signal
0	=	trace signal to 9% copiable
1	=	10 - 19% copiable
2	=	20 - 29% copiable
3	=	30 - 39% copiable
4	=	40 - 49% copiable
5	=	50 - 59% copiable
6	=	60 - 69% copiable
7	=	70 - 79% copiable
8	=	80 - 89% copiable
9	=	90 - 99% copiable
P	=	100% or Perfectly copiable

The R and S scales describe important signal characteristics, but they are too crude to reflect current amateur radio realities. At the bottom, the 5-level R-scale provides for a signal which is barely perceptible but unreadable, but it does not describe a signal which is completely indiscernible at the receiving end. There is also a huge gap between level 3, which is "readable with considerable difficulty" and level 4, which is "readable with practically no difficulty." Although an R-5 signal is officially defined as "perfectly readable," sitting at the top of a 5-level scale, it is frequently misapplied to signals which have not actually attained that summit level. We can now replace the subjec-

tive R-scale with a readily understandable 12-level C-scale for Copiability. In digital modes, copiability measurements can even be automated, and stations can dynamically adjust power high enough to be just barely within the perfect copiability range, yet low enough to minimize interference with other amateurs.

New S or Signal Strength Scale

0	=	no S-meter reading
1	=	1 S-meter unit
2	=	2 S-meter units
3	=	3 S-meter units
4	=	4 S-meter units
5	=	5 S-meter units
6	=	6 S-meter units
7	=	7 S-meter units
8	=	8 S-meter units
9	=	9 S-meter units
A	=	1 to 19 dB over S-9
B	=	20 to 39 dB over S-9
C	=	40 to 59 dB over S-9
D	=	60 dB or more over S-9

The current signal Strength scale is also behind the times. Although it started out as a 9-level descriptive list of relative signal strengths, it is now applied in practice by the use of S-meters. Although S-meters vary from "generous" to "miserly," they are still useful for making on-the-air comparisons. The new S-scale has 14 levels which can accurately describe gradations from no S-meter indication at the bottom to 60 dB or more over S-9 at the top.

Copiability and signal strength are very different. Sometimes a signal which doesn't budge the S-meter will still be perfectly copiable. Under difficult operating conditions, even a signal with 9 or A-level strength may not be perfectly copiable.

The new CS system is so much more useful than RS and RST that I believe that it will become a standard part of many amateur radio contacts, and I'm sure that most operators will take advantage of using it appropriately to advance the radio art.

— 72, Bruce Prior, N7RR

each wound on a ferrite torroid, one had a tri-filar winding of copper wire and the other a few turns of RG 174. The important point to understand is that both used transmission lines to convey energy. In these baluns the torroids simply increase the impedance of the outer conductor and core losses are usually insignificant and medium permeability nickel-zinc

ferrite torroids (eg AMIDON FT-82-61 with a mu of 125) under 2 inches in diameter can handle 100 watts easily. Due to the very small dimensions and tight coupling in the windings I believe they would be voltage and not current limited. Perhaps this is where the "Voltage Balun" idea comes from but once again I'm not sure.



By Art Lee WF6P

CHATTER

Ham radio is really a great hobby. You already knew that? Well, it has its practical side as well. Terry Parks, N6NUN, and I went down to Ventura harbor to ride around and work on his boat. On the way there, we were in constant contact with friends on the various nets Terry uses, plus talking to my XYL Donna, AB6XJ. Terry has a nice HF rig in his truck with a small whip antenna that really gets out. We did run into a bit of difficulty when he had to pull over on Highway 101 to set in a PL and frequency for the Ventura repeater. We had just finished breakfast at the Madona Inn and wanted to be ready for heavier traffic in the Santa Barbara area. Punching in new numbers on a new rig without a manual is no easy task. It took Terry a full 5 minutes to get it right and he is an excellent ham operator. His mobile rig operates on HF, 2 meters, 440, and (I believe) 6 meters. To master one of those rigs no larger than a cigar

box takes some real doing. We were able to hit the Santa Barbara repeater to talk with Tim Foy, AA6GP, a former Santa Cruzan and sailor who has relocated to warmer climes. Tim is an avid surfer so maybe one day I can talk him into becoming a Surfboard Mobile. With a waterproof case and a lanyard around his neck, I think he would do it. I remember a while back when Beth Peterson, W6RYL, operated Parachute Mobile when being towed off the Santa Cruz wharf behind a speedboat. (See! I told you it was a fun hobby!)

Terry and I spent about a week in Ventura, tinkering, adjusting and getting repairs done in the boat yard. A yard worker had to crawl down in the space-limited lazarette to get at the leaking packings on the twin rudderposts. It took him about two hours of sweating, grunting, pounding and bleeding (he cut himself with a razor blade while trimming packing for the shaft nuts). I did notice that the workman had the luxury of resting his head on the pile of stern anchor chain while he worked. To try to cheer him up I said, "Gee, that looks like an easy job!" His testy retort showed that he found nothing in my humor. "If it was easy, you'd be down here doing it!" With this, I retreated to the boat yard office to sample some of their day-old coffee.

Terry and I began each day checking in on the Baja Maritime Mobile Net (7.238

0800-0900). Donna came up on that net also so we always had good communications. We also had skeds on 7.225 which we used once or twice. I always like to talk to my bride on ham radio. It boosts my morale when I am away from home. We would also check in on the Wheels and Keels Net on 7.275 at 1700-1800 daily. This is an interesting net in itself. As the name implies, this group consists of sailors and former sailors (hams of course) who love to travel on land or sea, and for some, in the air (a couple have pilot's licenses!).

The trip back up the coast at the end of the week was fun. From Paso Robles, Terry talked to Dan Anderson, AA6GD, on the ham radio swap net. There was a lot of QRN so we didn't talk to him too long. From about Santa Barbara to nearly King City, thousands of acres of grapevines are being grown on former grazing land. We will soon be known as the "Wine State" if this keeps up.

Oh, we should all give a big thanks to Bob Fike, KO6XX, for teaching classes in ham radio. Per Don Nakano, KH6HOU, there were 5 upgrades to General and 17 brand new hams. From the list that Don sent via K6BJ email, there appeared to be many family relations on the list. Hey, the family that hams together, has fun together. Let's see, from my count, the YLs were well represented with 5 on the list.

Transmission lines behave as high Q tuned circuits so it is reasonable to think that a transmission line balun would have a narrow bandwidth. Jerry Sevik's fine book shows clearly this far from the truth

and that some designs operate well from 10 to 80 meters.

In conclusion an antenna balun is usually desired to keep a coax feeder from radiating and spoiling the directional pattern of an antenna. In a few cases

such as the Carolina Windom and the mobile VEE that Richard KG6AXD brought to the club meeting no balun is used and the resultant vertical radiation is put to good use.

— 73Ron W6WO

THE OFFICIAL BALLOT FOR THE SANTA CRUZ COUNTY AMATEUR RADIO CLUB YEAR 2001

Either vote at the November club meeting or return this ballot by mail to: P. O. Box 238, Santa Cruz, CA 95061-0238. Must be received by 4:00PM 11/17/00.

President

- Tom Johnson KQ6DV
- _____

Vice President

- Richard Trebbien KG6AXD
- _____

Secretary

- Cap Pennell KE6AFE
- _____

Treasurer

- Elaine Pennell KE6FRA
- _____

Board Members — Vote for five (5)

- Bruce Hawkins AC6DN _____
- Bill Walters W6PAD _____
- Allen Fugelsehth WB6RWU _____
- Mike Doern KF6UXB _____
- Ron Skelton W6WO _____

SCCARC Officers - 2000

President	Tom Johnson	KQ6DV	464-3120
Vice President	Don Hennese	KF6KGO	438-1486
Secretary	Cap Pennell	KE6AFE	429-1290
Treasurer	Allen Fugelseth	WB6RVWU	475-8846
Board	Bruce Hawkins	AC6DN	
	Dave Rank	K06RS	688-4542
	Bill Walters	W6PAD	688-0557
	Lauren Hardy	KC6TPW	462-0247
	Ron Skelton	W6WO	477-1021
K6BJ Trustee	Royce Krilanovich	AC6Z	475-4798

MONTEREY BAY ACTIVITY

K6BJ / KI6EH (Linked) • SCCARC Net Monday 7:30 PM 146.79- /147.945-
146.79- /147.945- • SC ARES Net Monday 8:30 PM 146.835-
(PL 94.8) • Watsonville ARES Net Thursday 8:30 PM 147.945-

K6BJ / UHF
440.925 (PL 123)

K6LY (Monterey) • Monterey ARES Net Wednesday 7:30 PM
146.97- (PL 94.8) • NPSARC Net Wednesday 8:00 PM
444.700+ (PL 123) • Monterey Bay Traffic Net Nightly 9:00 PM
(Linked) • Monterey Bay Swap Net Wednesday 8:15 PM
• Newsline (Ham News) Broadcast Wednesday 8:30 PM

N6IYA (Felton) • SLVRC Net Thursday 7:30 PM
146.745- (PL 94.8) • SLV ARES Net Monday 7:30 PM
• Newsline (Ham News) Broadcast Sunday 9:00 PM

6 Meter Local Net 52.8 MHz (PL-114.8) Sunday 8:00 PM
SCCARC 10 Meter Net 28.308 MHz USB Monday 7:00 PM
Mont. Bay Chapter 191 QCWA :Tuesday, 7:30PM, AA6T repeater, 146.700-(NO PL).

SCCARC Calendar of Events

SCCARC Board Meeting 6:30	Friday	Nov. 17
SCCARC Meeting	Friday	Nov. 17
Club Brunch	Saturday	Dec. 9
SHORT SKIP deadline	Monday	Dec. 11
Santa Cruz ARES	Tuesday	Dec. 12
SCCARC Meeting	Friday	Jan. 20

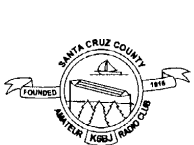
SCCARC Website: www.k6bj.org

CLUB E-MAIL: yourcall@k6bj.org
MONTHLY MEETINGS

The SCCARC Meets at 7:30 PM, on the **THIRD FRIDAY** of the each month (except December). Meeting are at Dominican Hospital, 1515 Soquel Drive, Santa Cruz.

NET CONTROL SCHEDULE (Subject to Change)

11/13	Jeff KF6BKG
11/20	Ron W6WO
11/27	Dave W6TUUW
12/4	Tom K6TG
12/11	Jeff KF6BKG
12/18	Allen WB6RVWU



SHORT SKIP

SANTA CRUZ COUNTY AMATEUR RADIO CLUB

P.O. BOX 238

SANTA CRUZ, CA 95061-0238

Forwarding and Address Correction Requested

Next Meeting Nov. 17

"ELECTION/ELECRAFT"

First Class