

MARCH 2001

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



“THE WALL OF FLAMES”

WATSONVILLE AIR SHOW



It is only three months from the next Watsonville Fly-In and Air Show, held each year at the Watsonville air port on Memorial Day weekend. Each year Amateur Radio provides support services to the event in the form of public safety communications on Amateur frequencies as well as government frequencies. We also provide eyes and ears to keep a watch on both the display area as well as the safety line to make sure the guests and the spinning props stay apart from each other. We work with the Watsonville PD, Fire, CDF Fire, the FAA, AMR Medical, the SO if required, the pyrotechnics people, the Air BOSS (directs the flying part of the show) as well as the show administration people (on their own admin. frequency).

The event this year will run all day on Friday, May 25, with an evening show including “the wall of flames” this year (if they get it OK’ed by air officials), and then full day activities on Saturday, May 26 and Sunday, May 27. Saturday and Sunday we field anywhere from 10 minimum to about 25 amateurs out on the show line as well as other front line positions. Friday starts out rather thin but then picks up in the evening to a full group of 10 to 20 people. Last year we had a great time on Friday night during the night show as they accidentally set

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THE CLANDESTINE HAM

Well I did it again.

I took a little break from radio, and as of late I have been trying to get back into Dxing. The current fodder is D68C on Comoros Island in the Indian Ocean. It is about as far from my QTH as one can get. Consequently, it is a difficult catch.

At my office, I have been running the DX packet cluster, so I can monitor when and where D68C has been. It seemed that they were very active during the day. So I thought, and here is where the trouble began, that if I had a station at my veterinary office, I might be able to snag them between patients. I already have an old extra transceiver so all I need to do is put up an antenna.

Well this should be easy. I will put up a dipole in the attic and see what I can do. On Sunday morning with the office closed, I went in to do my rounds and also put up the antenna. I built a doublet according to the plans a guy posted on one of the reflectors I follow. It was fed with ladder line and I ran it to a 4:1 balun located just above my office. From there I ran about 10 FT of RG8 to my tuner.

Putting up the antenna proved to be an amazing feat. My office building started out as two vacation homes many years ago that were connected and remodeled into one building. Consequently the attics are not connected and so there aren’t any long stretches available. Add to that 13 years of old files, equipment, etc. and there just wasn’t much room up there. So from the center I went 7 feet on each side made a right turn and went another 12 feet, made a right turn and with a rope tied the two ends together with about 5 feet between them. Looks kind of like a horizontal loop but not connected at the far end of the loop. I actually saw a similar antenna described in the ARRL antenna book. Back to my office and put it to the test. It tuned easily on 10, 15, 20, and 40. Cool I will be ready to go.

My plan was that I could leave the packet cluster running and if I saw the spot, I could try to work it. If I would use my headphones no one would know. Now keep in mind my XYL is my office manager, so I can’t get away with much.

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SHOW and TELL

I would like to announce that the next meeting will be “Show and Tell” night. Please bring in your latest projects to share with the club. Also, several stations have lately upgraded including me. I/we are very interested in CW keys. Please bring in your favorite key/keys to show us new upgrades. Many of us are in the market for new keys and it will help us to pick a good one.

— Richard, KG6AXD

CLUB MEETING FRIDAY MARCH 16, 7:30P.M.



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Free to members.

Santa Cruz County Amateur Radio Club, Inc.

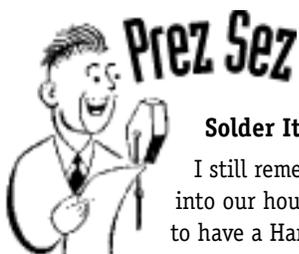
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Solder It!

I still remember the acrid smoke (along with my father's curses!) wafting into our house from the garage when I was a kid. Back then the only way to have a Ham radio was to build one. The introduction of high quality plug and play commercial rigs severely curtailed the build your own aspect of amateur radio, sadly symbolized by Heathkit's going out of business. Today we are seeing a renaissance of electronics construction by Hams, led in part by the QRP community's introduction of designs for low cost transceivers with a minimum of parts. Those who have done it know there is no thrill quite like the one you get from making a contact on a rig you built yourself!

This month's meeting provides an opportunity to show off your pet construction projects. Bring in something you've built, and we'll all have a good time inspecting each other's work! Remember this month's meeting will be in the basement conference room in the main hospital building.

—73, KQ6DV

Board Minutes

MINUTES of the BOARD from the SCCARC

A regular meeting of the board was called to order at 1835 hours on Friday, February 16, 2001 at Dominican Hospital Education Center in Santa Cruz. The vice president, Richard KG6AXD, was in the chair. Also present were the secretary, Cap KE6AFE; the treasurer, Elaine KE6FRA; the members of the board Bruce AC6DN, Bill W6PAD, Allen WB6RWU, Ron W6WO, and Mike KF6UXB.

- The minutes of the January 19 board meeting were unanimously approved.

- The treasurer's report was a financial statement that showed financial activity for the period from January 19 to February 16, 2001. The report, showing a balance on hand as of February 16 of \$4,124.56, was accepted unanimously upon motion by Mike.

- During committee reports, Cap reported for the repeater committee that the repeaters are still functioning well, the old spare building in Santa Cruz has been cleaned out and is now ready for use by club members, and ideas for such uses of the building are being sought.

- Ron reported for the newsletter committee that his "reader interest survey" results were still being tabulated. Cap reported that he was now

producing the mailing labels, after many years of fine dependable service from Dennis WA6FRF. Elaine reported that she would be undertaking the folding and mailing job after many years of fine dependable service from Dave W6TUW.

- During unfinished business, the board took up the president's nominations of committee chairs for 2001. Tom KQ6DV nominated Bruce to the TVI committee, Sue Ann to the refreshments committee, Cap to the repeater committee, Richard to the Programs and entertainment committee, Dan AA6GD and Richard to the greeters committee, himself to the publicity committee, and Ron W6WO to the Newsletter committee. Upon motion by Cap, the board unanimously approved these appointments.

- During new business, there was more discussion about using the old spare building in Santa Cruz. Ideas are sought. Ron brought up an idea for a club project. The idea is to have club members build the PSK-31 "Warbler" as described in the most recent issue of QST magazine. There was some discussion of repeater use policies. There exists a list of policies for club repeater users, a copy of which will be sent to members with their 2001 membership cards.

- The meeting was adjourned at 1928 hours.

Mystery Item



This month's mystery is a man rather than a microchip. Among his many bizarre inventions were motorized pogo sticks, mechanical jugglers, a barnyard elevator and a mechanical mouse capable of finding its way through a maze. Who is he and why is he so relevant to Ham Radio today? See elsewhere in this issue for an answer.

Regarding these e-QSL services...

They're good, they're cheap (free!) but their eQSLs are NOT accepted by most major award programs.

Reason: They can be altered very easily.

An eQSL system is under development by ARRL. It will be a year (and perhaps more) before it's ready, however. It uses strong encryption and will be bullet-proof.

73. Jim, W6CF



TRADE or SELL TABLE at February 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

2001 FYBO ANTENNA REPORT

At the February "Freeze Your Buns Off" event with Jeff AC6KW, Ron K6EXT and Tom KQ6DV, I had the opportunity to compare the performance of three portable antennas I had made over the last year, side by side, using the S-meter of a K2. The K2 included the ATU option, which is an automatic antenna tuner, with two BNC antenna connectors on the back and one-button antenna switching. A nice feature of the ATU option is that the ATU "remembers" the internal settings for each antenna so they don't have to be retuned when switched. You just listen to the QSO and push the button for instant comparison, without missing a dit (well, maybe a dit now and then).

Performance was compared on the 10, 15, 20 and 40 meter bands.

THE ANTENNAS

1. A multiband doublet constructed of 20 gauge 300 ohm "window" line with a 47 ft feed line and 33 ft legs (66 ft total top length). This is a low-loss balanced feed line that requires an antenna tuner and can be used from 10 meters through 80 meters. It was pitched as a dipole at a height of about 50 feet - it was on the verge of lifting the K2 off the table!

2. A wire ground plane antenna with 1/4 wave vertical and two 1/4 wave radials for 20 meters, fed with 20 ft of RG-58 coax. It was pitched with the top 30 ft up using a DK9SQ telescoping fiberglass mast, with the radials pulled out in opposite directions, sloping downward at about a 30 degree angle from horizontal. That places the feed point about 13.5 feet up. This antenna is described in "A tree-mounted HF groundplane antenna" on page 20.25 of the 1998 ARRL Handbook.

3. A resonant 20 meter dipole made from 300 ohm twin lead as described in my recent article in Short Skip. Recall that it has a half wave feed line and thus needs no tuner. It was pitched as an inverted vee with a center height of 30 ft using the same mast as antenna 2. This antenna is lighter and less bulky than antenna 2, and could possibly have more gain due to its more elevated point of maximum radiation.

Antennas 2 and 3 were made for backpacking use with a 20 meter SST (a 2 watt minimalist QRP rig) and several previous contacts were made with each from day-hiking locations, but I had never tested them side by side. Antenna 1 was made for multi-band Field Day type operations with the idea of also using it like antenna 3 with a (future) 20/40m dual band transceiver (read K1). As mentioned in the Short Skip article, antenna 3 should also be useful for multi-band operation from 10

through 40 meters with an antenna tuner, but had not been previously tested on anything but 20 meters.

4. Jeff AC6KW's multiband doublet constructed of 300 ohm twin lead feed line about 60 feet long, with 50 ft legs (100 ft total top length). It was pitched as a dipole at a height of about 55 feet.

BALUN USE

Jeff usually uses a 4:1 balun between antenna 4 and his K2. I did some initial testing with antenna 1 and the K2 ATU and found that on 15 meters, the ATU would not get the SWR below 2:1 unless the balun were used, so Jeff kept the balun with antenna 1. However, the ATU worked fine with antenna 4 and no balun, on all bands, so that's how it was used for all my testing. Antenna 3 also tuned fine with no balun. Antenna 2 didn't require a balun, since it's fed with 50 ohm coax.

THE TEST

Now, how does one compare four antennas side by side, using two antenna connectors?

In a round-about way, hi. Only two can be compared at a time, obviously. And both can't be on the portable mast at the same time. First, Jeff AC6KW compared antenna 1 with antenna 4. Both multi-band antennas were up at the same time, with the feed lines about 60 feet apart, so their legs overlapped a bit, with about 5 ft vertical separation. Jeff compared several signals, using a K2 S-meter and also by ear, and found them to be equivalent. His antenna had a longer top and was a few feet higher, but mine had lower loss feed line, and no difference was noticed. In fact, he ended up using antenna 1 for the rest of the day, and I ended up using antenna 4 for my control.

I put the DK9SQ mast up about 30 or 40 feet away from being directly under antenna 4 (and even further away from antenna 1), and its longer feed line allowed me to set my station up near the mast. The testing consisted of finding a signal with one antenna, noting the S meter level, then switching antennas and comparing. The ATU was initially tuned for each band (the K2 remembers settings for each band also) for antenna 4, and antennas 2 and 3 were noted to be very close to 1:1 SWR on 20 meters so they didn't require tuning.

Antenna 2 was tested first, on 20 meters only, and there was no difference between it and antenna 4 as I monitored several signals of varying signal strength. This speaks well for the performance of a resonant ground plane antenna mounted somewhat above ground. The extra height and length of antenna 4 (or

antenna 1 if it had been used) was not an apparent advantage. Because of its coax feed line, I wasn't interested on testing it on other bands through the ATU.

Antenna 3 was then hoisted to replace antenna 2, as an inverted vee guyed out at about 45 degrees from horizontal. Its performance on 20 meters was also identical with antenna 4. Since antenna 3 has a balanced feed line, further testing was done for multi-band performance. For this testing, the K2 ATU was retuned for each band. I have Tom KQ6DV as a witness, who owed me a cup of coffee for this, that on 10 meters antenna 3 performed as well as antenna 4. I couldn't get him away from his truck again to check out 15 meters, but it did as well. I had already tested it on 20 meters, so only 40 meters was left. I finally found a difference. I monitored several signals and found a consistent one to two S-unit difference, and a definite audio level decrease, for antenna 3 compared to antenna 4. But, they were all copyable. During the test I had a ragchew with Bill KF6RMK from San Rafael, who was not working the contest, but was using his NorCal 40A at 3 watts. I switched antennas randomly during the QSO, which for the most part was at RST 549, dropping to 539 or 529 now and then, depending on the antenna and/or the sky. I was favorably impressed with this little twinlead antenna, up only 30 feet, on 40 meters. For ultralight backpacking, where trees may not be abundant anyway, it would be adequate. But, for serious use, the value of a longer, higher antenna for the lower frequency was once again proven.

THE K6EXT VERTICAL

I also checked out Ron K6EXT's homebrew vertical, made using a flea market coil which is tapped with an alligator clip for the band of choice, and found it to be pretty easy to get 1:1 SWR on 20 and 40 meters. Ron enjoyed some time on 20 and 40 meters using two SSTs. Being more interested in my antennas, it didn't occur to me to include his in the comparison. I'm sure it did very well on 20 meters, as the clip is on the very top of the coil on that band and the antenna is almost resonant without loading. A 40 meter comparison with my twin lead antenna would have been very interesting. Well, gotta save something for next time ---

CONCLUSIONS

I guess all this might explain why I only made around 15 of our 87 contacts, hi. Good thing there were four of us!

A resonant antenna with full 1/4 wave legs seems to provide plenty of "bang for your buck". Adding length or height beyond that point seems to give diminishing returns.

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MFSK and CW Side by Side

MFSK and CW Side by Side - First Impressions

There are many new digital modes being introduced into Ham Radio these days due in part to the capabilities of the sound processing capabilities of personal computers. ZL1BPU has introduced a mode that uses multiple tones and Frequency Shift Keying- MFSK 16 uses 16 tones for instance. Because of its relative insensitivity to the amplitude and phase of a received signal this mode shows particular promise for long paths that characteristically have rapid QSB and multi-path distortion. It was hard for me to ignore the many claims of QRP performance and receive accuracy one hears for this mode so it begged the question just how good is it?

Any new digital mode will have pros and cons relative to the old digital favorite CW and it is my belief that there are 3 complementary ways of comparing them.

1. All communication systems can (and in my mind should) be compared at a foundation level considering the efficiency of bandwidth utilization, how available transmitter power is allocated in the modulation process, the theoretical noise level and the resultant fidelity of reception. Comparisons of this kind are useful- for example they show the potential benefits of the coding and error correction schemes involved. Technical comparisons of digital systems however, typically deal in bits per second, bit error rates, bits per second per Hz and so on and as humans it is difficult to make the leap from bits to characters, sounds and images. Technical comparisons usually make assumptions about the character of noise and interference and while this does provide technical insight it does not represent many real conditions. In the case of CW we have "man in the loop" and this makes purely technical comparisons even more difficult.

2. The performance of the hardware and software of digital systems can be measured and compared in a very controlled manner by modeling their behavior and introducing controlled amounts of loss, noise and distortion representative of propagation anomalies. Simulations can provide great insight but require a high degree of expertise and are unlikely to account for the variety of implementations and band conditions that we encounter, especially at HF.

3. On-the-air experience can provide practical proof of performance but without scientific foundations we are left with anecdotal knowledge that will vary from case to case and individual to individual. I have conducted some on-the-air tests of MFSK 16 and CW that at least provide something a little more than anecdotal results and moreover have been fun.

There is an opening between W6 and Europe on 20 meters for about 30 minutes following the morning grey line, currently around 1530 UTC. This magical long HF path of about 19,000 miles has all the loss and propagation anomalies you would expect. I regularly work Gert OE3ZK in Vienna Austria on CW, he has a good QTH for this path and a beam so I copy him well with my simple vertical. We came up with a test that allowed us to compare the effectiveness of MFSK16 and CW. Gert uses Multimode and Logging Software (MixW2.0 by Nick, UT2UZ) and programmed it to send my call 3 times followed by his call 3 times followed by his call on CW. He first sends this sequence at 400 Watts then again at 200, 100, and 50 Watts. My software (STREAM by IZ8BLY) decodes and prints his transmissions on the screen so I can see the errors at each power level. I made 5 digital recordings of the complete sequence over a 35 minute period so that at any time later I can duplicate the reception and can make measurements.

A precise count and comparison of errors proved difficult due to the varying QRM that occurred, so here are my tentative findings. Absent QRM at the peak of the opening at 400 Watts I could copy MFSK almost perfectly, and I estimate at 200 Watts better than 80 %, at 100 Watts about 50 % and at 50 Watts less than 10 %. As the sun rose we lost contact at 50 Watts and began to lose contact at 100 Watts.

It was a problem finding a slot free from interference and we picked 14098.50 to avoid the popular spots. We were operating on the USB just below 14100 and the CW beacon signal from W6WX was so strong it completely wiped out the MFSK. I suspect that it took over the AGC of the sound card. The much weaker signal from the ZL6B beacon was also quite audible but did not affect the MFSK at all. As MFSK needs only 316 Hz it seems advisable to use a "wide" CW filter of around 500 Hz rather than the "narrow" 1.8 kHz SSB filter I used in this test. The robustness of MFSK with adjacent channel and on channel interference is an interesting issue to explore further.

In keeping with other digital modes the radio has to be quite stable and ideally transmit and receive frequencies should be equal within a few Hz. At the start of a QSO, resolving MFSK requires careful tuning in the software but neither radio nor PC should require further adjustment for the remainder of the contact. Whenever a computer is connected to a radio it is important to get all the audio levels right and eliminate AC ground loops between the rig and the PC. I use a laptop and that

seems to be susceptible to RFI, no problem at 100 Watts but if I crank up the linear then I am immediately politely informed there are problems.

In summary MFSK was designed for long path DX and readability under difficult conditions is impressive. Murray ZL1BPU has regular solid contacts with IZ8BLY on 17 meters with only 5 Watts and dipoles. Gert and I believe that when we can see visual evidence of the CW on the "Waterfall" spectrum screen we could copy it by ear and quite likely with fewer errors than the MFSK decoder, at least for a short period. MFSK is designed to be resistant to impulse noise that would play havoc with CW. Gert and I are experienced CW operators and you might very well conclude that we have a certain bias. On that point I can not possibly comment- HI.

Murray is not resting on his laurels but is energetically exploring new versions of MFSK so we have an exciting future ahead. Incidentally some good news about MFSK is that folks using the mode are very progressive, knowledgeable, helpful and like to rag chew. Install a copy of STREAM, MixW2 or other fine software and give MFSK a try, it's an interesting mode for difficult DX.

— Ron W6WO

Clandestine Ham cont.

My next day at work, I put my plan into action. I set up everything and waited. Then at 17:00 UTC, there it was D68C on 10M CW. I told my coworkers that I was going to go get a cup of coffee and would be right back. I snuck into my office and closed the door. He was very weak, but calling CQ and no takers, perfect. Now I made my second mistake. I figured that with him being so weak he would never hear me at QRP levels, so I cranked the old Icom 701 up to 100W. I tapped out my call and back he comes .KW ? Wow he heard me on the first call. Back I send,599 de AC6KW TU (599, typical DX lies ;-). I hear him come back ..599 TU AC6KW.

Just at that moment, my office door bursts open. My XYL exclaiming "What the #\$%# are you doing. There is Morse code coming out of the speakers all over the hospital, and the computer screens are all blinking on and off with the noise on the speakers.

So much for my clandestine operation, I was caught red handed with my hand in the cookie jar. At least I did get my catch!

Lessons learned: 1. Much less than optimal antennas do work. 2. Stick to QRP operations, especially when you are trying to be sneaky.

-- 73 de AC6KW



By Art Lee WF6P

CHATTER

Have you ever been frustrated with a simple 20 minute job that took all day? When our bathroom vent fan got so noisy we couldn't stand it, I decided it was time to either oil the bearings or replace the 20 year old motor. Taking the light fixture/fan combination down was easy. The brackets were in good shape but the squirrel cage fan was pretty clogged with dust and lint. Out of balance? Possibly. But, the shaft was binding and I could barely turn it. The baseball-sized motor was next. It was not meant to be disassembled as the thin sheet metal housing tabs were staked in place. No problem. A dozen well directed taps with a hammer and drift punch and the case separated—after getting the plastic fan off. That wasn't as easy as one might think. However, a few HEAVY blows took care of that. The motor windings looked great, but congealed grease and grit on the bearing surfaces had to be cleaned. This done, I oiled the bearing surfaces and reassembled the motor. Only now, I could barely rotate the armature shaft. What was wrong? I repeated this procedure five times (patience

is a virtue, I am told). Each time I staked the housing, the shaft would bind. I was stumped. A trip to Orchard's Hardware revealed that the fan company had gone out of business. A new bathroom fan would take a big hunk out of a \$50 bill and hours to install. Another try at the discarded motor was in order. Then I discovered the problem. When I drove the shaft away from the fan, the armature slipped on its splined shaft about 3/8". That was strange, but this prevented the reassembly of the housing. Repositioning the armature on its shaft gave me the clearance I needed. A flick of the finger and the fan and shaft spun with ease. I spent longer repairing the motor than it took the manufacturer to produce it!

Yesterday I received a nice email from Angela and Eric aboard their sailboat Rouser in the Seattle area. Rouser was formerly owned by Ron Shannon, KD6BD, and Miggles, N6FAC. Angela and Eric have their Kenwood 430S installed and ready for service but are still studying for their ham tickets. They intend to take Rouser on a cruise of the Pacific when they have amassed enough funds for the trip. Both are studying the code and listening to the ham bands, in particular, Maritime Mobile nets.

I'm in daily contact on 7.220 with Terry Parks, N6NUN, aboard his Hatteras 53 in Ventura. He will be cruising the Channel Islands for a few days with a fellow ham. Tim Foy, AA6GP, is often another crewmember.

Need to look up call signs? Just go on-line and search for "QRZ." It works great.

Antennas cont.

Compromising length or height (as in antenna 3 operating on 40 meters) shows a measurable, though not unusable, drop in performance. The performance of antenna 3 on 40 meters provides an indication that antenna 4 (100 ft dipole) would have outperformed antenna 1 (66 ft dipole) on 80 meters. We'll have to check that out next time.

I have read many reports of minimal antennas that "work just fine" in QRP literature, without comparison to a standard resonant antenna at a decent height. But I have a problem using something "gud enuf" without knowing the tradeoffs. Consider that a single S-unit is approximately 6 dB. One S-unit decrease in performance is about 6 dB less power out. That reduces your 5 watt QRP output to 1.25

watts equivalent. Would you rather carry that big battery with your 5 watt rig, or a better antenna, small battery pack and your 2 watt rig? And the 2 watt rig with decent antenna will hear better! And a 5 watt rig with a good antenna will rule!

In summary, I'll say that I am very pleased with the performance of all the antennas, and love the little twinlead 20 meter (or multi-band) antenna even more than before. It tuned very close to 1:1 on 10, 15 and 40 meters using the ATU and has always been close to 1:1 with no tuner at all on 20 meters. It stays in a grab 'n go bag with the SST, key, battery pack, string and slingshot, ready for QRP To The Field, Flight of the Bumblebees, and a backpacking trip!

—Rich, KF6QKI

Airshow cont.

a field on fire across from the show area. It made for great entertainment but it kept us busy as it was one of the Amateur operators that reported "There is one, no two, no three, no now nine fires on the far side of the field!"

As for food we plan on the same support from the local McDonalds who provided us with lunch all three days, including Big Macs, fries, drinks and pies. Some of you may not like McDonalds but, hay, it was FREE food!

We have a web site set up where you can find the latest info on pre show training meetings and other information you will need leading up to the event. This will also be a location you can sign up.

www.k6bj.org/airshow

If you are already interested and would like to let me know or just ask questions, you can send me email at any of the following e-mail addresses:

k6rmw@k6bj.org k6rmw@arrl.net
bobwiser@aol.com

Or you can use the twisted pair and call me at 831-251-7235 and if I am not there you can leave a voice message and I will get back to you.

When contacting me about the show, please give me your call, your first and last name, your phone number and an e-mail address if you have one.

Looks to be a very interesting show this year and it also looks like we will be very active as there will be a lot more going on around the field this year.

So if you are at all interested let me know.

—73 Bob Wiser, K6RMW

SCCARC RENEWALS

Please check your Shortskip mailing label on this issue to confirm we already show you as having renewed your membership dues for 2001. The membership expiration date on the mailing label should be 12/31/01. If the date is 12/31/00 we don't have a record of your renewal. If you haven't renewed yet, please do. The 2001 SCCARC membership roster will be printed at the beginning of April based on the information we have then. The roster will be sent to 2001 members with their April issue of Shortskip (next month). If you haven't renewed by then, you won't receive Shortskip or the roster. If you have questions about your membership dues, please contact our treasurer Elaine KE6FRA or secretary Cap KE6AFE.

SCCARC Officers - 2001

| | | | |
|-----------------------|-------------------|--------|----------|
| President | Tom Johnson | KQ6DV | 464-3120 |
| Vice President | Richard Trebbien | KG6AXD | 426-0169 |
| Secretary | Cap Pennell | KE6AFE | 429-1290 |
| Treasurer | Elaine Pennell | KE6FRA | 429-1290 |
| Board | Bruce Hawkins | AC6DN | |
| | Bill Walters | W6PAD | 688-0557 |
| | Allen Fugelseh | WB6RWU | 475-8846 |
| | Mike Doern | KF6UXB | 477-1161 |
| | Ron Skelton | W6WO | 477-1021 |
| | Royce Krilanovich | AC6Z | 475-4798 |
| K6BJ Trustee | | | |

MONTEREY BAY ACTIVITY

K6BJ / KI6EH (Linked) • SCCARC Net Monday 7:30 PM 146.79- /147.945- 146.79- /147.945-

K6BJ / UHF

- SCCARC Net Monday 8:30 PM 440.925 (PL 123)
- SC ARES Net Monday 8:30 PM 146.835-(PL 94.8)
- Watsonville ARES Net Thursday 8:30 PM 147.945-

K6LY (Monterey)
146.97- (PL 94.8)
444.700+ (PL 123)
(Linked)

- Monterey ARES Net Wednesday 7:30 PM
- NPSARC Net Wednesday 8:00 PM
- Monterey Bay Traffic Net Nightly 9:00 PM
- Monterey Bay Swap Net Wednesday 8:15 PM
- Newslite (Ham News) Broadcast Wednesday 8:30 PM

N6IYA (Felton)
146.745- (PL 94.8)

- SLVRC Net Thursday 7:30 PM
- SLV ARES Net Monday 7:30 PM
- Newslite (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 | Mar 16 |
| SCCARC Meeting | Friday | Mar 16 |
| SHORT SKIP deadline | Thursday | Apr 5 |
| Santa Cruz ARES | Tuesday | Apr 10 |
| SCCARC Meeting | Friday | Apr 20 |

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.

Visit the SCCARC Website at www.k6bj.org

NEW! — CLUB E-MAIL: yourcall@k6bj.org

Answer to this month's Mystery.

Claude E. Shannon the Father of Information Theory.

As a tender communications engineer in the 50's I became aware of Shannon's famous treatise "A Mathematical Theory of Communications", published in 1948. This publication laid the foundation for all communication systems with his deceptively elegant formula $C=W \log(1+S/N)$ where C is the information carrying capacity of a channel of bandwidth W when a signal with a power S and noise of power N are present. Claude Shannon showed us what theoretically could and what could not be achieved but not how. Ever since, engineers (and I include Hams) have been striving to invent modulation and coding schemes that approach what is theoretically possible. A few months ago I became interested in how the CW and the new Ham Radio digital modes can be compared on the basis of the Shannon equation and pulled down a copy of the famous treatise. To my delight I found the paper starts by an examination of Morse code—I should not have been surprised as commercial CW telegraphy was widely used in those days. Claude Shannon is one of the truly great minds of the 20th Century.

—Ron, W6WO



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Next Meeting March 16th

Show and Tell

First Class