

MAY 2004

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



Member Profile K6IA

Howard Stephenson K6IA, hails from Napa and was first licensed in 1977 as a Novice WD6BND

He upgraded to Extra 1986 with help from his Elmer's who were N6XN, N6SZ(sk), and W6DNY (sk). They were all great cw ops who never stopped giving encouragement to work towards the 20 wpm cw requirement that was needed for Extra Class at that time. Howard also was an ARRL VE and helped the Napa group with their VE test sessions for about 4 years.

Over time these interests have included ARES and working with the CDF to spot forest fires as a Red Flag volunteer. A break in Ham radio made room to build a career as a Commercial Building Inspector and to raise a family.

It was in September 2002 that Howard heard a British station coming through BJ via Echolink; this rekindled several dimensions of Ham Radio for him. Howard now gets much satisfaction in working QRP especially when he can use finesse get through a pile-up. Howard has developed a keen interest in satellite communications and is about half way through WAS using the LEOs and has volunteered to be an Elmer to those who are



interested in hand-held satellite communications. . He has often attended our CAKE sessions and is very helpful with establishing the satcom station at N6IJ.

Other interests of K6IA include flying RC gliders, salt water fishing and astronomy. Howard would like to get to know more members of our club so please take time to extend a hand to him

Stump the Elmers

Last night we had a interesting question and answer session about various amateur radio subjects

Those with questions found excellent answers from others willing to share their knowledge and experience. We agreed it was useful and fun and worth doing again next Monday evening at 8:30 PM. on K6BJ and KI6EH linked repeaters.

On hand to assist with questions and answers (this week) were:

<i>AC6DN Bruce</i>	<i>KG6IRW David</i>
<i>AE6KS Jeff</i>	<i>KG6NRI Joseph</i>
<i>K6XX Bob</i>	<i>N1IPP Jim</i>
<i>KE6AFE Cap</i>	<i>N6TGM Steve</i>
<i>KE6UWH Phil</i>	<i>W8FLL Dave</i>
<i>KF6KVD Roy</i>	<i>WA6HHQ Eric</i>

And I'm sure other amateur radio Elmers listened in too, standing-by to provide the best available answers, as needed.

What would you like to know? Do you already know more than some others about an aspect of amateur radio?

Ask a serious question about amateur radio, or answer one, on the SCCARC repeaters next Monday evening at 8:30 PM.

73, Cap

N6IJ VHF and UHF Satellite Communications

I can report some good progress has been made, with the invaluable assistance of Jim N1IPP, Howard K6IA and Bruce AC6DN we now have the dish re-installed on the boom. Yesterday we could copy the FO29 beacon right down to the horizon during a recent pass but this was over the Pacific so no stations were heard. The 2 meter and 70 cm yagis appear to be working well. The program written by Steve AC6P to control the FT847 for Doppler shift is working fine.

Some issues remain to be dealt with.

The antennas are on a short temporary mast so we can not fully use the elevation rotator as the 2 meter

array would hit the ground. The antennas are fixed pointing at about a 30 degree angle of elevation but can be fully rotated in azimuth.

Our 2 meter transmission is getting into the 70 cm RX and we need to find out just how that is occurring as it prevents us listening to our downlink signal.

We have not succeeded in setting up the automatic tracking of the rotators. We want to use our tracking software NOVA to do this but there is an issue with the use of the parallel port when running XP. Steve is investigating.

We do not as yet have a desk mic or a pair of headphones.

We have not completed installation of the pole steps and have not scheduled the permanent installation of the antennas. We need help with this so if you are an experienced climber I want to discuss the task with you.

Hopefully we will need some QSL cards in the near future so if we have an artist in our midst please step forward

On May 15th we will be hosting a training session on the satcom station and folks from AMSAT/Project OSCAR will be joining us. The event begins at 1:30 PM

—73, Ron W6WO

CLUB MEETING FRIDAY MAY 21, 7:30 P.M.



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ARES EVENT — Help Needed

I am now looking for sign-ups for two events that will be here shortly in Southern Santa Cruz County.

Tour de Cure Bike Ride,

Sunday, May 23

Watsonville Fly-in and Air Show

Friday-Sunday, Memorial Day Weekend
(May 28-30)

The two events are listed on the SSCARES web page which you can get to by going to: <http://www.k6rmw.net>

Follow the link to the SSCARES page and take a look at both events. Please follow the sign-up information and send me an email. We will also have a first this year at the Fly-in. We are going to have a introductory Show-and-tell session for any new Hams that have never worked any public service events before. If you are interested in this, let us know and we will sign you up for the "walk and talk" which will be on the field, during the event, for about 1 hour. You will get to see a part of the actual event and see what it is like first hand to be working in a public event.

Thanks for your help. Hope to see your sign up emails soon.

73... Bob Wiser, K6RMW

EC, Southern Santa Cruz County ARES



April Cake—Our session today proved as stimulating as always. Here are some samples.

Thanks to Peter AB6WM for showing his digital camera which weighs one ounce. This is now equipped with a timer to take numerous pictures from a kyte. Camera-equipped kyte flyers consider Hams as Geeks, now where's the justice in that? Just improve the water proofing Peter.

Eric WA6HHQ showed the mechanism that drives a vertical stepper antenna. Looks a well engineered job but possibly not beyond a capable home brewer.

Some 70s era mobile phones were displayed by Jeff AE6KS. Those wishing to build their upper bodies should contact Jeff. A vintage 900 MHz patch antenna was opened up for inspection.

A very neat home brew SWR meter was shown by Ron K6EXT. Manhattan style construction is sometimes called "ugly" but done well like this it looks great and can out-perform PC boards.

Three examples of our Tin Ear 40 meter RX were on display.

Anyone who has listened to Bruce AC6DN must wonder what his secret for such great audio might be. Turns out he has done some simple but ingenious modifications to a Yeasu hand held microphone.

Apparently a web site called Whimsywear includes a link to software for learning CW. Is that what CW is destined to become—sob sob excuse while I wipe my eyes.

Dave W8FLL shared some practical experience with Hustler multiband verticals.

The question of the day was "How do the near fields and far fields from antennas compare and in what way is this important?" It was generally agreed that near fields are not radiated as such as they depend on a physical structure and might be predominantly magnetic (H) or electric (E). Near

field E and H components are typically 90 degrees out of phase whereas in the far field the E and H waves are "distinguished by the fact the electric and magnetic components, although perpendicular to each other in the wave front, are in time phase and the total energy is divided equally between them" ARRL Antenna Handbook 19th edition page 2-7" This topic could benefit from more discussion as it might be a key to low noise RX designs.

Bob K6XX described the big job of building tower bases for his antenna farm and is urgently in need of a top section of Rohn 45 tower. Contact him with any leads

May Cake—Our session at Gigi's was very well attended and we were pleased to greet Marco AA6ZF and friend Adam from Marina. At age 13 Marco was at one point the youngest licensed ham in Germany.

Here are the topics that were in play, often 2-3 at the same time.

How many uses can you think of for exploding wire?

We came up with no less than eight that ranged from minute medical processes to blasting fire control lanes. I liked Marcos best as a means to recover data from an instrument on the bed of the ocean. You have to be present to obtain these pearls of know-how.

Amateur satellites weighting 1 kgram being developed at Stanford U

Why fuses are rated in Volts and Amps not just amps.

The "intelligence" of auto tuners.

The force on guy anchors and how to design their foundations. This is a current challenge for Bob K6XX.

The mystery item was a tuned coaxial common-mode choke. K1TTT has a web site that describes the results of measurements made on air cored coaxial chokes using a 4193A Network Analyzer, it is a recommended reading.

The question of the day was "When playing CDs why do they sometimes "stick in the groove" when there is no groove. We have to thank our resident encyclopedic resource Jeff AE6KS for his treatise on CDs used for archival storage.

On May 15th feel free to visit N6IJ for the satcom demo

-- 73 Ron W6WO



By Art Lee WF6P

CHATTER

Propagation on 40 meters is terrible and getting worse. I couldn't get out very well the other day so went to 80 meters, which wasn't much better. I was trying to contact my pal Terry, N6NUN, aboard his boat in Sausalito. We had a short QSO and were about ready to sign when Donna brought me my coffee. "Did you know your antennas were down again?" she asked. Oh no! My 40 mtr dipole was laying on the ground and draped across my 80 meter wire. Once again I proved that antenna height doesn't mean everything as folks in Arizona and San Diego were copying me on 40. Later, when I checked, I found that the nylon guys holding my pushup tower had parted,

allowing it to tilt to one side at about a 45 deg angle. A quick push to straighten it out and replacement of the guy made everything right again. I have promised myself that I will energize a nearby barbed wire fence as an antenna to test it out. It is down in a few places so I will prop it up.

I think our club is excellent. We are fortunate to have excellent leadership in the form of highly qualified and energetic officers. I hate to miss our meetings as our speakers provide a wealth of information; not only that, but having eyeball QSOs are fun. While I have not yet made one of the CAKE meetings, I am excited with the prospect of attending in the future. From emails on the K6BJ Reflector, I see lots of interesting discussions and show-and-tell sessions taking place. Ron, W6W0, is doing a fantastic job.

Shucks! When we sold our 1992 Pontiac I did not have time to remove our through-the-window 2 meter antenna. It was firmly glued on the rear window and we couldn't pry or cut it loose. Given more time, I would have contacted the folks at Hustler to obtain the proper solvent. I only used

it a time or two, instead, I relied on our handheld for hitting our K6BJ repeater. Traveling to and from our daughter's home in Sacramento would have made the window mounted antenna ideal for hitting my brother Stanley's Pinole repeater. Once, traveling down Hwy 80, grand daughter Cheri, KE6BOP, was making all kinds of 2 meter contacts using a mag mount on the roof of her Volvo. Handhelds just can't hack it.

On my most recent trip up to the USS Hornet at Alameda, I wanted to view the radio shack. It was a closed compartment and the local ham club has the key. I was given the email address of the contact person and will see what develops from that. I'm writing this from Sacramento and don't have the info at hand. By next month I should have an operating schedule for those of us who might want to work the ship.

Field Day—Where are you?

Field day is just around the corner. June 26-27. For more information contact Tom KG6A0. Article next month.

Broadband over Power Lines—an Insider's Point of View

During a QSO with Brad K9BZ we exchanged views about BPL. Brad is the VP of Engineering and Chief Technology Officer at Astound Broadband a subsidiary of XCEL Energy. I asserted BPL was inappropriate use of technology and likely to prove to be fools gold from a business perspective.

We subsequently followed up with some friendly exchange of email. Here is a sample that I felt would be of interest to club members.

Hey there Brad,

Thanks for the thoughtful response—quite long list of IFs and obstacles. If you don't mind me saying so the subject is seductive and I hope that your career isn't on the line.

While at EPRI I became an advocate of a firm preparing a new constellation of LEOs primarily aimed at your point about management of the grid. Unfortunately the venture capital dried up with all the bad press surrounding satcom at the time.

Hi Ron...

Thanks for the note. It's always nice to run into a ham I may have crossed professional paths with at one time or another.

I have to say I am a proponent of BPL with a couple of big "IFs"...

...IF it doesn't generate harmful interference

to hams or other licensed spectrum users (this is my largest concern)

...IF it can increase consumer high-speed internet access opportunities (I live in the country where my only access option is dial-up)

...IF it can increase telephone (VoIP) competition at the ILEC level including becoming an alternative local loop option

...IF it can help electric utilities better manage and operate their transmission and distribution systems (not for greater revenue, but for better service, faster restoration, etc.)

Personally, I think the largest obstacle to large scale BPL deployments is economics. Most of the technology companies addressing the BPL market use a method of service transformer bypass which has them looking at a capital investment of roughly \$5k per transformer. In most cases this investment can be spread across 4 to 10 customers, but it's going to take a long time to recoup their money at 10-20 percent penetration getting \$19.95 a month per customer.

Another huge obstacle is the fact that you need some form of network backhaul every 1/2 mile of distribution line. Running new strand and fiber cable between power poles is tough to do for under \$20k per mile... underground construction runs typically in excess

of \$125k per mile in the city these days. I suppose an RF backhaul solution could present itself, but the lower bandwidth capability might be a problem.

There are several additional issues related to things like distribution system switches and how reconfiguration of feeders affects BPL path distances and routes to customers, etc.

I've been looking at this quite a while Ron and I just don't see how companies can make a solid business case for any wide scale BPL deployments right now. The largest I know of is a planned 55,000 passing system being proposed by CINERGY and CURRENT TECHNOLOGIES in the Cincinnati area by the end of the year. I guess we'll get the scoop on how bad the interference is from the hams in that area by Thanksgiving or Christmas.

I do agree with you that the interference standard should be that "BPL signals should not prohibit K9BZ from working 3B9C while running 1 watt into a wet noodle" :o) All kidding aside... I take my ham radio privileges seriously and want to guard against any attempts, willfull or not, to reduce the quality of my spectrum. That's why I've been evaluating a BPL technology which notches out the ham bands.

—73, Brad - K9BZ

SCCARC Board - 2004

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	Rich Wadsworth	KF6QKI	722-7005
	Royce Krilanovich	AC6Z	475-4798
	K6BJ Trustee		

MONTEREY BAY ACTIVITY

- SCCARC Repeaters: K6BJ 146.790- PL 94.8 Santa Cruz (linked w/Watsonville full time)
 KI6EH 147.945- PL 94.8 Watsonville (linked w/Santa Cruz full time)
 K6BJ 440.925+ PL 123.0 Santa Cruz
 • SCCARC Net Monday 7:30 PM 146.79- /147.945- /440.925+ linked
 • SCCARC 10 Meter Net 28.308 MHz USB Monday 7:00 PM
- SLVARC Repeater WR6AOK 147.120+ PL 94.8 Ben Lomond
 • SLVARC Net Thursday 7:30 PM
- LPRC Repeater WR6ABD 146.640-(PL 162.2)
 • LPRC Net Tuesday 8:00 PM
- 6 Meter Local Net 52.8 MHz (PL-114.8) Sunday 8:00 PM
- ARES Nets
 • SC ARES Tuesday 7:15 PM K6BJ 146.790-(PL 94.8)
 • SLV ARES Tuesday 7:00 PM W6JWS 146.745-(PL 94.8) & WR6AOK 147.120+(PL 94.8) on alternate Tuesdays
 • South County ARES Tuesday 7:15 PM K6RMW 147.00+ (PL 94.8)
 • LP ARES Tuesday 7:15 PM AE6KE 146.385- (PL 98.4) & AB6VS 440550+ (PL 94.8) linked
 • SC County ARES Tuesday 7:30 PM 146.79- / 147.945- / 440.925+ / 147.180+ (all PL 94.8) (linked)
 • Monterey ARES Net Wednesday 7:30 PM K6LY 146.970- (PL 94.9)

FOR MORE INFO SEE: <http://www.k6bj.org/freq.html>

SCCARC Calendar of Events

SCCARC Board Meeting 6:30	Friday	May 21
SCCARC Meeting	Friday	May 21
Short Skip Deadline	Monday	June 7
SCCARC Meeting	Friday	June 18
Field Day	Sat-Sun	June 26-27

MONTHLY MEETINGS.

The SCCARC Meets at 7:30 PM, on the **THIRD FRIDAY** of the each month (except December). Meetings are at Dominican Hospital, 1555 Soquel Drive, Santa Cruz.

SCCARC Website at - www.k6bj.org

CLUB E-MAIL: yourcall@k6bj.org

Quiz Answers

1. 1916.
2. 1991.
3. He made the first ham contacts from space, from the shuttle Columbia.
4. Nearly 400
5. 1984
6. 43
7. 8 hours
8. 1948 (((QST))) bravely proclaimed, "These clever little devices are worth keeping an eye on." (,)
9. \$8. (It was a UV-202, in 1921.)
10. The devastating 1913 midwest severe windstorm.

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SHORT SKIP

SANTA CRUZ COUNTY AMATEUR RADIO CLUB
 P.O. BOX 238
 SANTA CRUZ, CA 95061-0238

QUIZ

by AA6ZG, Leon Fletcher

1. SCCARC was founded in what year?
2. In what year did the FCC discontinue requiring knowledge of Morse Code for hams?
3. What hamming achievement was attained by W5LFL in 1983?
4. About how many hams helped in the Santa Cruz area following the 1989 quake?
5. In what year did volunteer examining for ham licenses begin?
6. How many years ago was the first amateur radio satellite launched?
7. How long after the Pearl Harbor attack did the FCC order all hamming stopped?
8. In what year was the invention of the transistor announced?
9. How much did the first RCA transmitting tube for hams cost?
10. What disaster was the first in which communications were provided by hams?

First Class

Meeting: May 21, 7:30PM