

AUGUST 2003

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



STREAMING K6BJ AUDIO

For the past few weeks, I've been streaming audio from the K6BJ repeater over the internet. As always, things did not quite work as expected. Some encoders had huge delays. Codecs designed for music didn't sound well with voice. Most encoders would belch bytes even when there was no audio to broadcast. The chart below shows the problem. In most cases, I used the minimum bandwidth codec (usually GSM or ACELP).

Windows Application:	Delay Rate sec	Squelch?	kbits/sec
Windows Media Encoder 7	10	6.4	No
Windows Media Encoder 9	90	6.2	No
Shoutcast	90	15	No
Simplecast	270	12	No
Speak Freely 7.2	2	5	Yes

From the above chart, it would appear that Speak Freely is the obvious winner. However, it requires installing the Speak Freely software to listen and configuring port redirection on hardware firewalls. Since it is intended as an internet "intercom" a connection must be established to the server. If someone decides to transmit, everyone else hears it. So, it's not ideal.

As part of this experiment, I began recording each days conversations on K6BJ using Scanner Recorder.

<http://www.davee.com/scanrec/>

The program automatically removes the dead air between conversations and generates a text log file of the transmission times. It generates about 12MBytes of WAV files each day for about an hours worth of play time. The plan is to play back each days worth of conversation at the end of the day instead of monitor ing the repeater. It would also provide evidence and an instant replay. Instead, I found myself listening to 300 repeater identifica-

tions each day plus assorted announcements. Time to disable the TX PL encode when the repeater ID's.

The next step was to implement an on the air lie detector. The vocal cords resonate at about 8 - 10 Hz. When stressed, they shift up in frequency to as high as 16 Hz. There are various programs for analyzing a WAV file for stress induced resonant shift.

<http://members.tripod.com/JusticeMachines/Prevaricator/freeware.html>

<http://www.involved.com/ewolfe/vsa/>

The plan is to have a cover tone beep or to have the courtesy tone change when someone lies. Instead of a lie detector, I ended up with a crude radio signature analyzer. The first half second of every transmission is detected as a lie thanks to the synthesizer settling time. After that, I noticed that the longer someone talked, the greater the stress. That's because most of us are not professional public speakers and have trouble talking and thinking at the same time. This creates stress, which shows up on the lie detector.

Listening to the evening commute is also entertaining. Several of the drivers are apparently in a permanent state of panic as driving Hwy 17 is anything but relaxing. They aren't lying, but rather are scared stiff.

The technology is simple enough to be implemented with a PIC controller which could be embedded in the radio (or cell phone). There are already combination recorders, MP3 players, and lie detectors on the market.

<http://www.liebusters.com>

After that, ham radio will never be the same.

—Jeff AE6KS

BPL is "Spectrum Pollution"

ARRL President Jim Haynie, W5JBP, says Broadband over Power Line (BPL)-- if widely deployed--would represent "spectrum pollution" on a level that is "difficult to imagine."

Haynie reacted after seeing videotape and early data from recent ARRL field studies in four states where BPL is undergoing testing. "BPL is the most crucial issue facing Amateur Radio and the one that has the most devastating potential," Haynie said. In terms of interference potential on HF and low-VHF frequencies, "nothing is on the same scale as BPL."

A form of power line carrier (PLC) technology, BPL would use existing low and medium-voltage power lines to deliver broadband services to homes and businesses. Because it uses frequencies between 2 and 80 MHz, BPL could affect HF and low-VHF amateur allocations wherever it's deployed. BPL proponents--primarily electric power utilities--already are testing BPL systems in several markets, and one reportedly is already offering the service. FCC rules already allow BPL, although industry proponents want the FCC to relax radiation limits. It's feared such a change could exacerbate BPL's interference potential.

In late July, ARRL Lab Manager Ed Hare, W1RFI traveled some 1350 miles to visit BPL trial communities in Maryland, Virginia, Pennsylvania and New York to take measurements over significant parts of the HF spectrum. He also took initial readings at low-VHF frequencies. Driving a specially equipped vehicle loaded with radio gear and measurement devices, Hare said he didn't need to look long or track down "a few hot spots" to find BPL interference. "The signals were all over," he said. "The interference

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CLUB MEETING FRIDAY AUGUST 15, 7:30P.M.



Published 12 times per year.
Free to members.

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I would like to report that this is the clearest warmest most beautiful Santa Cruz summer that I can remember! Hello all fellow amateurs. It looks like it's coming up time for another club meeting. I believe we are meeting down in the basement in the main hospital again this month. Be sure to check with Jim's (NF6Z) announcements also included in this magazine for the official word. I hope all of you guys have used this most excellent summer to the best advantage. I have been working on some projects to improve my home station and doing a little operating as well. I have learned so much and it seems the more I do the more I learn. I'm going to keep doing that! As usual, the meetings are a great place to get those eyeball QSO's in. It's very fun to talk to everyone at our meetings. Please come out and make this meeting fun.

—73 Richard KG6AXD

August Speaker: Ben/N6FM

TOPIC: "9-1-1 in Santa Cruz County"

BIO: I've been a licensed ham since 1962, Extra since 1966. Worked for US Navy from 1966 to 1973 and went through their four year electronics apprenticeship there. worked on aircraft navigation, identification and communications systems and fire control radar.

Worked for Motorola from 1973 to 1974 then left to work for a private mobile telephone company until 1975. Went to work for the City of Costa Mesa as communications department tech until 1994. While there, became involved in one of the first computer aided dispatch systems installed, using DEC PDP11-70 and then vax. Attended programming classes by vendor.

Moved up to Santa Cruz to join a team designing, building, and managing a new 9-1-1 center to consolidate the dispatch activities of the Sheriff, and the police departments Santa Cruz, Watsonville, and Capitola, and the 10 fire agencies and AMR ambulance. My role is managing the systems there.

Married, XYL is Diana, son Daniel KC6NVC who currently works for North County Tow and soon Fed EX.

Member profile David Shoaf KG6IRW/M

David and his XYL Sharon clearly love Capitola and have embarked on a project that gives a whole new meaning to "Home Brew". By literally moving a precious old house to one side they are able to preserve the past as well as gain space to construct a new house on the lot. The picture shows a tense moment when the house had been lifted onto wheels and was being pushed into its new position. Has anyone operated ham radio from a moving house we wondered!

David's interest in the radio goes way back and he holds an Amateur Extra Class license and a Commercial Radio-Telephone License.

David has a BS Computer Information Systems and BS in Electronics Engineering, with a major in Analog RF systems. At HP David is the World-Wide HP Standards Marketing Manager specializing Inter-

net software technologies. His expertise in the software arena blends well with his passion for radio equipment. A busy fellow but he finds time to be supportive of activities at N6IJ and is a regular contributor at our CAKE meetings, in addition to building a couple of K2s just for fun.



Lots of knowledge, vision and energy are coupled with a jovial personality. We are all better off for having David a member of our club. Wish him well with his ambitious project.



By Art Lee WF6P

CHATTER

I received a nice packet in the mail earlier this month from Patrick Henry, WA6PKM, our club member up in Gold Beach, Ore. The information he sent included a special supplement to his Curry Coastal Pilot newspaper. The supplement honored servicemen and servicewomen who served in WWII. In the photos, they all looked so young! The women were beauties and the men, handsome. The editor ran the feature after asking for input from the community. Stories flooded in from servicemen and women or their families. Regrettably, they could only publish a few. "This is a shame, "

wrote the editor, "as the ages of these veterans was from 75 to 90. We are losing this generation at a rate of 1000 or more per day." (Note: my brother was a 17 year old sailor aboard the USS Saint Louis during the Japanese attack on Pearl Harbor. He will be celebrating his 80th birthday in September.) In his letter, Pat says, "I am fortunate to live in a very patriotic area."

Pat included a copy of the Coos County Radio Club and Pelican Bay ARC newsletters. They both contained photos and, in the former, a couple of ham cartoons. One cartoon pictured a patient on a psychiatrist's office couch with a dozen handhelds hanging on his belt. The caption read: "Well, it all started when I was a child. I felt I had difficulty communicating with people." Cute. The Coos County ARC is teaching Morse Code, SSTV, Packet and Pactor technology. Both clubs look very active. I will pass on the copies of the Newsletters to our editor, Ron. Thanks for sending the material, Pat.

DX Report from Big Sur

We returned from 4 wonderful days camping on the coast in the Big Sur area. The site had superb views to the West and the South but propagation would be completely blocked by mountains to the North and East.

I did not expect to hear any EU stations but I found a good signal from a G on 30 meters and on 20 meters at around 10 PM I heard other very weak stations working the West Coast and into the Pacific. The reason I could copy them at all was the atmospheric noise and man-made noise levels were lower than I have ever experienced. I guessed there were no distant storms from the West and the mountains blocked anything from the East. Things changed on the second night as someone on the site had what sounded like a bug zapper that put out S9+ noise. The Icom 706 noise blanker was totally ineffective.

I was getting reports that my CW signal was choppy and in one QSO it was suggested this was due to the poor QSK capability of the 706. Shifted to semi break-in and all was well. One more reason I have found to dislike this radio. The good news is that I had fun operating /P and the best DX was China and Antarctica- at least the screwdriver antenna worked well.

—Ron W6WO



Did you know? Many of our new (!) hams have been receiving license expiration notices from ARRL? Golly, can it be that 10 years has gone by so quickly? Daughter Joyce, husband Preston and their daughter Cheri have only a couple of months to go. I downloaded the ARRL forms for them to fill out but told them to save thirty-seven cents postage and renew over the internet directly to FCC. Wow! What a difficult task that turns out to be. I tried to renew Donna's, but came up empty. Lotsa clicking around with my mouse produced only half of what she needed. At least we were all able to obtain the prerequisite core (FRN) number. Joyce, KN6RR, wrote an email to FCC and received a lengthy and complicated set of directions to follow. I'll have to see how she made out. Seems like it shouldn't be that hard.

I just finished reading "Beyond Survival: Building On Hard Times - A POWs Inspiring Story," by Gerald Coffee, Captain, US Navy (ret). I met Jerry in Honolulu after his release where his family and mine were close. Jerry describes the treatment given POWs of the Vietnam War. Some died in captivity, others were permanently deformed from wounds and injuries not treated by the NVA. Jerry listed many of my former squadron mates who were shot down over Laos, Cambodia and North Vietnam. He described the tap code method used for communications. Morse code was too cumbersome to use so a matrix of columns and rows of 5 each was used for a total of 25 letters. By using the tap code, vital information was passed between the hundreds of captives, keeping them up on the latest news. Communications from cell to cell was a tremendous morale booster. For a look into the heroism and hardships our captured men endured, the book is available in the Santa Cruz public library.

According to Leon Fletcher, AA6ZG, Dan Anderson, AA6GD, is ill and is not receiving visits or telephone calls at this time.

Correction to last month's Short Skip: I had listed Leon Fletcher's call sign as AA6GP, it is AA6ZG. Sorry Leon. AA6GP is Tim Foy; sailor, surfer, mechanical engineer and former Santa Cruzian who I talk with daily on the Baja California MM net.

TUTORIALS on the Internet

The internet is such a powerful reference source. Search engines such as Google make it soooo easy to find just about anything about anything....

One of the ways to whittle down a search on Google is to use Boolean Expressions. These include AND NOT OR and other functions. Check into Google for an explanation of it's advanced search capabilities.

Here is a powerful tip though. Suppose you want to come up to speed on that always mysterious subject, transmission lines....In fact a tutorial on them would be great. For that matter a tutorial on any topic you need to come up to speed on, can be had very simply by using Google, and typing in the search box:

"Transmission Lines" +Tutorial

This will get you dozens of tutorials on transmission lines.

You have to type it in carefully....Quotes around multiple words return only the exact match of the multiple words inside the quotes, and the (+) sign is the boolean that ties the transmission line subject with anything also having the word Tutorial in it. Be sure to have at least three spaces in front of the plus sign, required, in order to make it indicate an "and" function....

—73, de Pat AA6EG

CW CODE PRACTICE

Interested in building a small code practice machine capable of displaying input from an Iambic key

Take a look at CwType:

<http://www.dxsoft.com/>

You connect your paddle to your printer port (with a couple of resistors on specified pins) and the code you send is displayed in the text area of the CwType window. Add a connection from your computer to your transceiver and it's a supermemory keyer.

— W3TM

MARINA AIR FAIRE

October 4 is our Marina Air Faire. A gathering of Eagles! WWII warbirds, and WWII fighter Aces, and bunches more. Consider coming down for a good time....all is free, admission, and parking.

There will be as many as 14 P-51 mustangs giving rides to the public during the Saturday show.

(This may be one of the largest gatherings of P-51 Mustangs in one location on west coast, in a long time...possibly ever....)

I am looking to install a APRS system in a plane and provide a PC display to the gathered audience. Anyone interested in making this happen?

—Pat AA6E aae6@hotmail.com

SDR...

Here is a readable article about Software Defined Radios which is a recognized trend both in commercial and Ham Radio products.

<http://www.intel.com/update/contents/wi07031.htm>

Most of the action that I am aware of in the ham fraternity is in the LinRad area. Now if only I could get past the command line!!!!

—73, Ron W6W0

MUSICAL HAMS

The musical minded members in the club might be interested to know that a famous Welsh choir will be performing in Santa Cruz on October 28th and in Salinas on October 30th. Two members of the choir are hams which is how I got involved with setting up the venues.

The beautiful sounds of this choir of about 50 voices can be heard on their web site at <www.malechoir.com> it's well worth checking out

They come here entirely at their own expense and no tickets are sold for the performances. The majority of the choir will stay in hotels but a few would like to be hosted by local people. All in all it is a very expensive vacation but such is their pride in Welsh culture.

I am presently polling my circle of friends (and that I hope includes at least some club members HI) with a request for offers of accommodation. They will need some single accommodation and some double accommodation for those who will travel with their wives.

Please let me know if you have questions or will be in a position to assist these fine folks.

—73, Ron W6W0

NCVEC FILES TO END CW TESTING IN THE USA

The National Conference of Volunteer Examination Coordinators has filed a Petition for Rule Making before the FCC to end Morse testing in the United States. In its July 29th request, the NCVEC asks the FCC for an immediate end of CW testing of applicants. The NCVEC request is based primarily on the action taken in Geneva at last month's World Radiocommunications Conference. At that time, Morse testing as a world standard was abolished, leaving it to individual nations to decide whether or not to continue to administer CW exams. The NCVEC petition concurs with the WRC findings. It notes an appearance that most of today's radio amateurs want to communicate using voice. Because of this, the NCVEC says that it makes no sense from a regulatory standpoint to require hams to be Morse proficient when the greater majority of radio amateurs show no desire to use the mode. The petition also notes that the future of the hobby now encompasses many new modes that were undreamed of only a few short years ago. It adds that while manual telegraphy is a noble part of Amateur Radio's past, it is no longer the services prime emission mode. The NCVEC approach will still require all applicants for an Amateur Service license or upgrade to pass the current written exams. Only Morse testing would be eliminated. As we go to air no Rule Making designation has been assigned to this request by the FCC. The full text of the petition can be found on our website at www.arnewsline.org (ARNewsline(tm) from NCVEC release)

BPL Interference continued

found ranged from moderate to extremely strong," Hare said. The video shows the S meter of an HF transceiver holding steady in excess of S9 as the speaker emits a crackling din, which one observer described as sounding like a Geiger counter. Only the very strongest amateur signals broke through on 20 and 15 meters. Hare noted that the field strengths of the various systems all were within FCC Part 15 limits for power line carrier (PLC) devices.

At a couple of points, the video shows noise continuing nearly unabated on 15 and 20 meters as the car moves down long streets lined with overhead wiring. Hare said the signal propagated for at least a couple of miles down one road. "Signals would have been much stronger using a gain antenna," he observed. Hare's vehicle carried a roof-mounted, horizontally polarized Buddi-Pole antenna--a loaded dipole.

Each BPL system exhibited a unique sound depending upon the modulation scheme it used, and Hare said he was able to distinguish three types during his recent tour. While in most cases, the signal sounded like static or pulse noise, in one city, it resembled sort of interference a computer monitor or similar device might generate, with warbling "birdies" blanketing the bands at closely spaced intervals. "Naturally, overhead wiring was the worst," Hare said. BPL signals continued to be audible in neighborhoods with underground electrical utility wiring, although it was somewhat attenuated.

The ARRL already has filed a 120-page package of text and technical exhibits in response to the FCC's Notice of Inquiry in late May. The League plans to file reply comments--responses to comments already filed--by the recently extended August 20 FCC deadline.

Haynie says a lot of hams want to know more about BPL but are put off by the size and depth of the technical documents and filings. He feels that seeing the video presentation might make a stronger impression. Countering critics who suggest that the League is only using BPL as a fund-raising ploy, Haynie said the League would not be putting as much effort into attempting to quantify the BPL threat and to put a face on it if it weren't real.

"The BPL industry and their associations have told the FCC and the world that there is no interference potential from BPL systems," Haynie said. He noted that the American Public Power Association, in its comments to the FCC, put the burden on the technology's challengers to empirically demonstrate its

LEGISLATION SIGNED

Governor Davis signed legislation today that would ensure that amateur radio stations' communication will not be obstructed by any city or county ordinance. Due to the wide number of volunteers who utilize their amateur radio licenses during times of natural disasters or emergency situations, maintaining amateur radio stations' ability to broadcast is an important resource to security and rescue aid.

"Licensed amateur radio operators give thousands of hours of volunteer service to the state and local governments," Gov. Davis said. "They are an important part of our public safety network."

AB 1228 by Assembly member Bob Dutton (R-Rancho Cucamonga) mandates that city or county ordinances that regulate amateur radio station antenna do not obstruct the communication abilities of the station. It also allows the antenna structures of the radio stations to be constructed to effectively maintain their broadcast services; therefore, preserving the integrity of the radio communication system.

There are nearly 5,000 volunteers in the state of California who hold amateur radio licenses. These volunteers play a crucial role in events of natural disaster or emergency situations when telephone systems are inoperable by utilizing their broadcast ability. By providing a reliable communication system during an emergency situation, such as a terrorist attack, amateur radio stations provide an invaluable service to the state of California.

—From QRZ 7/15/03

interference potential. "The video presentation does just that," Haynie said. "Anyone seeing these BPL signals for megahertz after megahertz for miles along a power line should be convinced that BPL--even operating at the present FCC limits--poses a serious threat to all HF and low-VHF communications." While the deadline for initial comments on the FCC's May 23 NOI has passed, the FCC has now extended the reply comment deadline to August 20. More information is available on the ARRL Web site. The ARRL filed a 120-page package of comments and technical exhibits in response to the BPL NOI on July 7. There's additional information and additional video

Ham Radio for Kids

Harmonics Web pages open up the possibilities of ham radio for youngsters: An eight-year-old kid's first crystal set, built with the help of his grandfather. Hearing radio signals without electricity. That was how many veteran Amateur Radio operators were introduced to the magic of radio in past eras. The new century offers many avenues--including the Internet--through which youngsters can experience the same magic. With that in mind, ARRL Field and Educational Services introduces the Harmonics Web pages <<http://www.arrl.org/FandES/ead/youth/>>. "The mission of the new Harmonics kids' pages is to expose children to the possibilities of Amateur Radio, not clobber them over the head with a pile of technical information," said Educational Programs Coordinator Jean Wolfgang, WB3IOS. The Web pages currently feature the first of a number of age-appropriate activities for kids. Web visitors can play games, download informative printouts to color, read news articles about other kids involved with ham radio, work puzzles, click on live links, listen to audio samples of Morse code and space station contacts and much more. Throughout the site, kids are greeted by colorful cartoon "hamsters" who explore the world of Amateur Radio along with the young people visiting the site. The pages target kids aged 5 to 15. Harmonics invites them to get acquainted with the basic concepts of Amateur Radio through immediate personal interaction and by discovering how other kids are using ham radio for personal communication and to expand their exploration of science and technology. Wolfgang says Harmonics will include more games and a QSL card template with drag-and-drop interactive design in the near future.

—Excerpt from The ARRL Letter - Vol. 22, No. 28 - July 18, 2003

clips on the ARRL "Power Line Communications (PLC) and Amateur Radio" page.

<http://www.arrl.org/tis/info/HTML/plc/>

—Excerpted from ARRL web site and QST

Also check: To look at the current comments, go here:

http://gulfoss2.fcc.gov/prod/ecfs/comsrch_v2.cgi

SCCARC Officers - 2003

President	Richard Trebbien	KG6AXD	426-0169
Vice President	Jim Welty	KF6YRD	685-9225
Secretary	Cap Pennell	KE6AFE	429-1290
Treasurer	Elaine Pennell	KE6FRA	429-1290
Board	Bruce Hawkins	AC6DN	
	Vic Linderholm	AE6ID	476-5567
	Allen Fugelseh	WB6RWU	475-8846
	Mike Doern	KM6IKE	477-1161
	Ron Skelton	W6WO	477-1021
K6BJ Trustee	Royce Krilanovich	AC6Z	475-4798

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
• SCARES Net Monday 8:30 PM 146.835-(PL 94.8)

SLVARC Repeater WR6AOK 147.120+ PL 94.8 Ben Lomond
• SLVARC Net Thursday 7:30 PM

SLVARES N6IYA 146.745- PL 94.8 Felton
• SLVRC Net Thursday 7:30 PM
• ARES Net Monday 7:30 PM

NPSARC K6LY 146.97- PL 94.8 / 444.700+ PL 123 (linked) Monterey
• Monterey ARES Net Wednesday 7:30 PM
• NPSARC Net Wednesday 8:00 PM
• Newline (Ham News) Broadcast Wednesday 8:30 PM

6 Meter Local Net 52.8 MHz (PL-114.8) Sunday 8:00 PM
Mont. Bay Chapter 191 QCWA :Tuesday, 7:30PM, NS6G repeater, 146.700- PL 151.4

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

SCCARC Calendar of Events

SCCARC Board Meeting 6:30	Friday	Aug. 15
SCCARC Meeting	Friday	Aug. 15
Short Skip Deadline	Monday	Sep. 8
SCCARC Meeting	Friday	Sep. 19

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

AUGUST MEETING — Room Change

Our next club meeting will be August 15 at 7:30 pm. We will meet in basement of Dominican Hospital, Conference Rooms #1,2,and 3. Speaker will be Ben N6FM, on the topic of the 9-1-1 system in Santa Cruz County.



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

MEETING FRIDAY AUGUST 15, 7:30PM

First Class

3D Glasses...

If you're at McDonald's, you may wanna pickup some of the 3D glasses (red-blue) that come with the "Spy Kids 3D" comics that they're giving away until Aug 14 with a "Happy Meal" (Yech). Maybe bribe one of the kids into loaning you the glasses and forget about the "Happy Meal".

The glasses work very nicely with the Radio-Mobile 3D stereoscopic topo images at:
<http://www.cplus.org/rmw/images.html> Just click on any picture labeled "stereo view".

There are also some SRTM earth view 3D images at:
<http://www.rainbowsymphony.com/earthin3d/earthin3d.html>

I created some stereo views of most of northern Calif and most of Santa Cruz county.

See: <http://members.cruzio.com/~jeffl/coverage/scz-topo-3d.jpg>

<http://members.cruzio.com/~jeffl/coverage/calif-topo-3d.jpg> (About 150KBytes each).

They look weird without the glasses, but really look nice in 3D. You can see every canyon and mountain (as well as the SRTM map data errors usually found at the bottom of canyons). I'll try to throw together some repeater coverage maps in my "spare" time.

Drivel: If you turn the glasses upside down, the mountains become deep valleys.

—Jeff AE6KS