

SEPTEMBER 2009

THE MONTHLY NEWSLETTER of the SANTA CRUZ COUNTY AMATEUR RADIO CLUB

SHORT SKIP



Veterans Day at K6V



The emergency radio room at the Santa Cruz Vets Hall will be hosting a special event station K6V on Veterans Day. K6HJU has reserved the call sign for Nov 7-12. Veterans Day of course is 11/11. Besides K6V the Santa Cruz United Veterans Council which sponsors the Radio Room and the Santa Cruz Womens Club will be co-hosting a commemorative event in honor of the (All Black) 54th Artillery Regiment at Lighthouse Field during WWII. Installation of a Plaque at the Lighthouse at 1000 and Luncheon and other presentations to follow at the Auditorium at 12-1500.

The Emergency Radio Room on the 2nd floor will be on-the-air at 0800 until 0Dark30 or operators run out of gas or finals. N6GOW has bought new tubes for the Swan which he wont use until the event so "they stay hot". As usual "Rick" N6GOW will anchor the station but is looking for more operators who are invited to the other above mentioned events.

Next Club Meeting...

50 Years of Amateur Radio in the Monterey Bay

GUEST SPEAKER: Mr. Art McDole, Radio Pioneer and Emergency Communications Director for Monterey County for 41 years shares his thoughts, wisdom and stories.

SUBJECT TOPIC: Ham Radio and the Magic of the Airwaves. Mr. McDole shares with us the history and the magic of amateur radio and public service communications in the Monterey Bay during the last fifty years.

My Life as a Capacitor

Hello, My name is Cap and I am a member of the Capacitor family. Our family is in the storage business and we store energy in electrical form, actually we store large numbers of little bundles of energy (called electrons) that otherwise wander around on their own, or were motivated to leave by pressure back home.

Energy is something that has the potential to do work and in our business it is vital that we store it without loss. In a perfect world none of it would be wasted, but in reality some is lost due to our cousin Res who is a Resistor. We have a complicated relationship with Res, when he is in his shunt mode we expect him to be infinitely large but when he is in his series mode we expect him to be zero. How well we do our job depends on how close Res comes to those ideals. We have a girl cousin called Coil, who is an Inductor, and although not perfect, we love her much more than Res. Coil stores her energy in a magnetic field and we have fun oscillating together by exchanging our energy back and forth, often at very high rates.

We can take in energy very slowly or quite fast and can ship it out at much the same rates. Capacitors are pretty tolerant chaps but note of warning; we can become quite violent if we are asked to take energy in or ship it out instantly. Our biggest enemies are short circuits that try to take out all stored energy, literally in a flash, or excess voltage that is a killer.

The amount of energy we can store depends on how big our store is (Duh!) and our capacity is measured in Farads. A one-Farad

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CLUB MEETING FRIDAY SEPTEMBER 18 7:30PM



Greetings to all CAKE consumers and wannabees.

Following our stimulating sessions at GIGI's I often try to capture the proceedings with a brief report.

Today, for a change, I wish to report what happened later that day. During the session Kerry (K6RRY) mentioned that the police at the Burning Man event, monitored channel 5 of Multi-Use-Radio-Service radios to receive calls to 911 from the general public. Kerry had discovered that his Yaesu FT-60R could be modified to operate on that frequency by removing a single resistor. Excellent research to find that solution Kerry! The key question became, could this SMD size 0402 component be safely removed? Great minds weighed in on de-soldering or using a fine burr drill bit, Bob (K6XX) suggested clipping it out. After lunch Kerry was presented with all these

options and followed Bobs suggestion using a fine pair of wire cutters. Nevertheless it took audacity and careful work to remove it and after a tense moment we were gratified to find that his radio can now also be used as a MURS device.

During our morning session Ron W6WO expressed concern that some copper traces in his power amplifier project might just burn out when carrying 20 amps of current. Tom AE6XQ suggested the only way to find out was a valid test. Later that day Tom showed up with a variable 12 volt power supply having a current display and a sample trace was tested up to 40 amps. The trace became too hot to touch but didn't fail. Tom's remark was "if your amp fails it will be due to other causes". Not exactly a vote of confidence but nevertheless we all learned something and a tense moment passed with a sigh of relief.



Old W.Elec tube from the 40s.

Capacitor

capacitor could store a large amount of energy and a very common size is a micro-Farad, which is one millionth of a Farad, written as a μF . Then there are nano-farads nF and little pigmy guys called pico-farads pF .

The electrons we store are in a tense, static state and that tension becomes a motivating force (electro motive force), to drive a current of them out into the dynamic world of circuits. Emf is measured in volts and very many stored electrons are required to produce large emfs and electron current flow. For the really curious, $6.241\ 509\ 629\ 152\ 65 \times 10^{18}$ electron charges are equivalent to a typical AA battery. By the way don't tax your brain with that number, look up the word "Coulomb" in Wikipedia if you need more insights.

I want to say a few words about or heritage. The very first of our line began in 1744 when a Dutch scientist in the town of Leyden, stored static electricity between two electrodes on the inside and outside of a jar. It became the original form of capacitor and its discovery was of fundamental importance in the study of electricity. Not so long ago, capacitors were few in kind and still rather primitive by today's standards. I can remember as boy opening up some dead bodies to find rolls of paper with sticky stuff between the layers. The state of the art in our family today includes solid materials like ceramic, and the very best use fine porcelain.

The future looks very exciting for the new super-capacitor members of our family, their ability to increase the density of storage is rather like adding a second floor in a warehouse. New technology in development of this kind could potentially replace batteries in all-electric cars, plug-in hybrids and many consumer products. We can imagine one day our technology will be advanced enough to store massive amounts of energy and solve an age-old problem; "once electricity is generated it is hard and expensive to store". One day our family may go a long way to reduce our dependency on carbon fuels.

Finally I may have been too hard on our cousin Res and a little infatuated with Coil. Perhaps someone will write the their life stories soon.

—73 from our California home in Cap-itol

License Upgrade and Testing

<http://RADIOEXAM.ORG>

Online practice testing:

<http://copaseticflow.blogspot.com/> <http://www.qrz.com/p/testing.pl> <http://www.eham.net/exams/>

<http://HELLO-RADIO.ORG>

<http://ARES.SANTA-CRUZ.CA.US>

<http://WWW.K6BJ.ORG>

Laurel VEC has (free) exams quarterly in "Monterey", including Oct. 17, 2009.

http://www.k6ly.org/index.php?option=com_content&task=view&id=27&Itemid=32

ARRL VEC: Exam Sessions in the Santa Clara Valley

Apple Computer, I Infinite Loop, Cupertino, Ca.

The Silicon Valley Volunteer Examiner (VE) Group holds Tests for all license grades -- Technician, General, and Amateur Extra.

Dates: Our walk-in test sessions are on the first and third Saturdays of each month.

Time: You may start taking your test at any time between 8 AM and 11 AM. (You must arrive before 11 AM.) Special Test Sessions may have different times, as announced.

What to Bring: All necessary forms will be furnished to you. Please bring two forms of identification (one preferably a picture ID), the original and a photocopy of your current license (if you are a Ham), and the original and a photocopy of any CSEs showing earlier completions. A calculator may be helpful. Youngsters may be identified by a properly identified adult.

Cost: There is a \$14 charge for taking the tests (the same \$14 lets you take as many different-level tests as you want during one morning).

Where to Find Us: (NEW) Apple Computer, I Infinite Loop, Cupertino, Ca.

When will I Get My New Call? We no longer mail people the calls as they are available on ULS, and people just search for their names there. You may contact us for more information: By email (preferred): ad6zh@arrl.net By phone: (408) 507-4698 (Morris Jones, AD6ZH)

Sunnyvale VEC Exam Sessions for 2009, California only.

Sunnyvale: Sep 11, Oct 9, Nov 14, Dec 11. all 10:30AM

Redwood City: Sep 18, Nov 20, Dec 18 all at 10:30AM

Passing the Tech Test

By Dan Romanchik, KB6NU

I teach One-Day Tech classes. At the start of each class, I go over the following to help focus students on what to keep in mind when taking the test. It occurs to me that these are good tips no matter who is taking the test, so if you know someone who will be testing soon, please feel free to pass along this advice.

Technical Topics

The Tech test is not very technical, but there are three technical topics that you need to know:

- * Ohm's Law,
- * how to calculate power, and
- * the relationship between frequency and wavelength.

Ohm's Law

The basic formula for Ohm's Law is voltage (E) equals current (I) times resistance (R), or $E = I \times R$. On the test, there are several questions where they give you two of the values and ask you to calculate the third. If you're asked to calculate the current, you use the formula, $I = E / R$. If you need to calculate the resistance, use the formula $R = E / I$.

How to Calculate Power

The formula for calculating power is power (P) = voltage (E) times current (I), or $P = E \times I$. To calculate the current drawn, when given the power being consumed and the voltage applied to the circuit, use the formula $I = P / E$.

Relationship Between Frequency and Wavelength

There are several questions that require you to calculate the wavelength of a signal or some fraction of the wavelength. The reason for this is that antennas are often a fraction of a wavelength.

The formula that describes the relationship between frequency and wavelength is wavelength in meters = $300 / \text{frequency in MHz}$. One question asks for the approximate length of a quarter-wavelength vertical antenna for 146 MHz. To figure that out, you first calculate the wavelength:

wavelength = $300 / 146 = 2.05$ m or about 80 inches

One quarter of 80 inches is 20 inches, and the antenna will actually be a little bit shorter than that because radio travels more slowly in wire than it does in free space. The correct answer to this question is 19 inches.

That's all there is to the technical part of the test!

Safety

There are lots of questions on the test about operating safely and being safe when working on antennas. My advice when answering these questions is to always choose the most conservative answer. The two exceptions are when asked what is the lowest voltage and current



By Art Lee WF6P

CHATTER

Our August club meeting was well attended with about 35+ members and guests. The kickoff to the meeting began at 7PM with an ARES meeting led by Jerry Inman, AE6I. The first meeting centered on a twenty-five point list of topics for future ARES discussions and action. This brainstorming session was quite productive, pointing out the need for retraining for some and providing new info for others. We had to put our thinking caps on to come up with need-to-know topics. Jerry did a fine job of eliciting thoughts and recommendations. Future meetings will commence at 6:30PM before club meetings. You do not need to be an ARES member to attend.

The regular club meeting began promptly at 7:30 with a discussion of Field Day by Bill Conklin, AF6OH. He discussed the need for publicity we need as a ham community. He is working on plans for future ham club PR videos to be made for presentation on TV Channels 25 or 36. Each member gave an individual report of what our present home projects are. There is a wide range of "happenings," including improvements on home stations and antennas, contests and operating techniques. As stated by Bruce Hawkins, AC6DN, "The upside of being unemployed is that you have time to work on your home station." Bud, K6OZX, a club visitor, served on the USS Badoing Strait (CVE-116) dur-

that can hurt you. For these questions, the correct answer is the second lowest choices.

Emergencies

There are lots of questions about what to do in emergencies. There are two things to keep in mind when answering these questions:

- * You should do whatever you can to help someone who is in an emergency situation.
- * You can even break the rules to help someone in an emergency situation. This includes operating on frequencies you are normally not allowed to operate on and communicating with other stations in other radio services.

Miscellaneous Tips

Here are a couple of other miscellaneous tips:

ing the Korean War. I wanted assignment to that ship or one like it but was sent instead to a long two-year tour on Guam. Back in 1949/50, Guam was practically a desert island. I was in an aviation detachment of about 25 men at NAS Agana. After Bud got out of the navy he worked for Lenkert Electric, then Lockheed.

The next day, a Saturday, we had our bi-weekly CAKE meeting. It was nearly the same group from the club meeting as the night before (less those who working on home chores such as plumbing, job overtime, mowing lawns, etc.). Peter, KE6RAX, announced that he would be putting on a ham class at the yacht harbor in October. He has openings for fellow instructors or guest speakers.

Speaking of antenna improvements, my 40-meter beam elements and rotor have been moved from a loose stack in my front driveway to its new position on my side yard fence. For support brackets to keep them off the ground, I selected some of my finest (termite free) redwood 2x4s. Cut to the correct size and securely nailed in place, the carefully stowed beam elements are easily accessible for future assembly next spring - or summer.

A month ago I had a nice surprise. Hearing a good, clear "CQ" with a steady fist, I gave an answer. The Op and I chatted awhile at about 15 wpm. Fred, KD7ZNC, and I exchanged the usual info: name, rate and service number. He then paused a minute and said, "Hey Art, it's good to talk to you again!" This doesn't happen too often, so I checked my log. Sure enough, nearly 5 years ago we had a QSO. Back then he was operating a home brew station at 20 watts out and freshly retired from FedEx. It had been solid copy from Rio Rico, Arizona. This time he was on an ICOM 728.

* The answer is 'D'. If one of the answers to a question is, "D. All of these answers are correct," chances are that is the correct answer. There are 18 questions with this option, and of those 18 questions, there are only two questions--T3B06 and T5B03--where that is not the correct answer.

* Long-Answer Rule. Where one answer is a lot longer than the other options, chances are that this is the correct answer. I haven't done an exhaustive study of this, but when one answer is very long, take a good, hard look at it.

That's all I have. Good luck on the test!

SCCARC Board - 2009

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MONTEREY BAY REPEATER ACTIVITY

Santa Cruz County	K6BJ 146.790- PL 94.8 Santa Cruz KI6EH 147.945- PL 94.8 Watsonville K6BJ 440.925+ PL 123.0 Santa Cruz • SCCARC Net Monday 7:30 PM 146.79- /147.180+ /440.925+ linked • SCCARC 10 Meter Net Monday 7:00 PM 28.308 MHz USB
ARES Nets	SC County Wide ARES Tuesday 7:30 PM on 147.180+ PL 94.8 443.600+ PL 110.9 (Linked repeaters)
San Lorenzo Valley	WR6AOK 147.120+ PL 94.8 Ben Lomond • SLV Net Thursday 7:30 PM
Loma Prieta	AB6VS 440.550+ / AE6KE 146.835- PL 94.8 (Linked for net 94.8) • LP Net Tuesday 7:15 PM
Monterey	K6LY 146.97- PL 94.8 / 444.700+ PL 123 (Linked) Monterey • NPSARC Net Wednesday at 8 PM on K6LY/R • Monterey ARES Net Wednesday 7:30 PM K6LY 146.970- (PL 94.9) • Newsline (Ham News) Broadcast Wednesday at end of NPSARC Net
LPRC	WR6ABD 146.640- PL 162.2 / 442.900+ PL 162.2 (winsystem) • LPRC Net Tuesday 8:00 PM 146.640- (PL 162.2) • Newsline (Ham News) Broadcast Wednesday at end of NPSARC Net

• Santa Clara Valley Section Traffic NET Tuesday 9:00PM 146.640- (PL 162.2)

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

SCCARC Calendar of Events

ARES Meeting	Friday	Sep 18
SCCARC Meeting	Friday	Sep 18
Cake Meetings	Sat	Sep 12, 26
Board Meeting	Wed	Sep 23
Short Skip articles due	Mon	Oct 5
SCCARC Meeting	Friday	Oct 16

MONTHLY MEETINGS.

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

NET CONTROL SCHEDULE

(Subject to Change)

9/14	Chris KG6DOZ
9/21	Tom K6TG
9/28	Greta KI6NTL
10/5	Phil KE6UWH
10/12	Allen WB6RWU
10/19	Tom K6TG

SHORT SKIP

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